

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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In This Issue:

The South's Optimistic Outlook
Upon the Year 1912.

Realization of the Dream of a
Railroad Across the Florida
Keys.

Mineral Development in Oklahoma
in 1911.

Vital Points in the Textile
Disturbance in England.

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Classified Opportunities, Pages 96, 97 and 98.

BALTIMORE, JANUARY 4, 1912

B. t. u.

THE MEASURE OF HEAT

The term British thermal unit (abbreviated B. t. u.), often confronts the user of coal. As a yard stick is a measure of length, a B. t. u. is a measure of heat. The total amount of heat contained in a pound of fuel, all of which is liberated by complete combustion, is expressed in B. t. u.'s. A single heat unit is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at atmospheric temperature. Heat units make steam and steam makes power.

Below are tabulated, from some of the highest scientific authorities, the heat values of the commoner combustibles contained in coal:

SUBSTANCE	B. t. u. Per Lb.	
Acetylene Gas	21,465	Included in the "Volatile Matter" of proximate analysis.
Marsh Gas	23,515	
Olefiant Gas	21,345	
Hydrogen Gas	62,035	
Carbon	14,450	"Fixed Carbon" of proximate analysis.

CLINCHFIELD COAL IS HIGH IN HEAT VALUE

Clinchfield coal is rich in Hydrogen and the Hydro-Carbon gases shown above. These "VOLATILE" gases burn above the fuel bed with rapidity and great intensity in close proximity to the boiler surfaces. Quick liberation of heat units means quick generation of steam; hence the economy in using Clinchfield coal which maintains boilers at high capacity easily and continuously, thus delivering more than the rated horsepower. Clinchfield coal ranges from 14,000 to 14,700 heat units per pound, because it contains small percentages of oxygen, moisture and ash, which are valueless, and large percentages of the combustibles highest in heat value.

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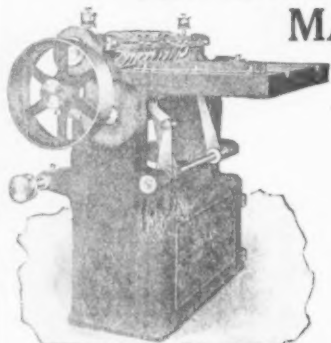
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You will find our prices and goods "RIGHT"
Send complete specifications.
Send for Metal sample plate. Erdle Perforating Co., Rochester, N. Y.

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Bliss Patented No. 225 Gang Slitter; slits plain or decorated stock, and slits it dead true.

Complete High-Speed, up-to-the-minute equipments (Full Automatic or Semi-Automatic) for the economical production of Open-Top Cans, Packers' Cans and metal packages of every description. We guarantee Workmanship, Material and Design.

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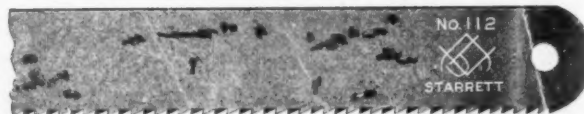


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Strong, well balanced, convenient; tubular steel frame; extra heavy steel wheel; legs provided with renewable steel shoes.

THREE SIZES
No. 52, 6 cubic feet; No. 54, 8 cubic feet;
No. 55, 10 cubic feet.

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SYRACUSE, N. Y.



When you sell a Hack Saw try to find out on what sort of work it will be used. Show your clerks what each kind of saw will do. This will add to your reputation and your sales.

Starrett Hack Saw Frames

will immediately be coveted by a good mechanic—he will see the many special features and the fine quality of workmanship and finish.

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B-14







GRINNELL
AUTOMATIC SPRINKLERS



paved the way for the following emphatic declaration of the **Rochester Chamber of Commerce**—

"We give our unqualified approval to the Automatic Sprinkler System"

These are given as some of its positive advantages:

1. It is on duty *all the time*.
2. It puts all of its water on *the exact place to do the most good*. Compare this with the fire hose of the city departments, that apply only about half the water on the heart of the fire, owing to the angle at which they must be directed.
3. The sprinkler system *operates only where it is needed*. It does not flood the entire building.
4. It works just as effectively in a room full of smoke as anywhere else, and stays on the job when the heat would drive the firemen away.
5. It is effective at the top of a fifteen-story building, where a fire hose will not reach. The city fire departments are severely handicapped above 90 feet from the ground.
6. It is the one great protection from conflagrations. It holds a fire back long enough for the fire department to get it under control. In many cases it has saved the building so protected.
7. The sprinkler system fire-proofs the stock contained in a fire-proof building.
8. Sprinklers can be used in churches, theaters and schools *in the danger places only*, and will not disfigure the building.
9. A sprinkler system will pay for itself in from five to seven years through the reduction of insurance premiums. Many companies will install a sprinkler system without charge, except for the difference between the former premium and the new one for a few years. At the end of that time the system is your property, and your insurance is greatly reduced.
10. During first quarter of 1911, of 1086 fires in sprinklered risks, 646 were practically or entirely extinguished by automatic sprinklers, 403 were held in check by the same means, and in but 37 cases was its action found unsatisfactory."

Our Periodical

The Automatic Sprinkler Bulletin

is full of information about Sprinkler Protection. You will receive it regularly if you ask for it.

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SOUTHERN DEPARTMENT, ATLANTA, GA.

Plants, Warehouses and Offices in Principal Cities of United States and Canada

More than 15,000 fires have been prevented from spreading through the action of

GRINNELL
AUTOMATIC SPRINKLERS



40-7



¶ Has it ever occurred to you that every little lighting unit "has a meaning all its own"—that there are a dozen different units that can be used "for your particular service," but only one that is best adapted to it?

¶ The great variety of Fostoria units, ranging in size from 2½ to 500 watts and in kind from the Carbon to the Modern Drawn Wire Tungsten Filament Mazda, affords assurance that we can furnish lamps best adapted "for your particular service."

¶ Our descriptive bulletins and traveling representatives provide the necessary data and means to determine what is the best "for your particular service," and how it should be installed, if you are in doubt.

¶ The whole proposition is well worth your attention, but, if you cannot give it—send for our little twenty-minute booklet, entitled—"Lamps and the Man." You'll like it.

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Southern Office, 73 South Pryor Street, Atlanta, Georgia

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Ingram-Graham Elec. Co., Jacksonville Fla.
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Deshon & Davison, Tulsa, Okla.

Perry-Mann Elec. Co., Columbia, S. C.
W. M. Reay, Norfolk, Virginia.
Summers-Parrott Hdw. Co., Johnson City, Tenn.
Woodward-Wight & Co., New Orleans, La.
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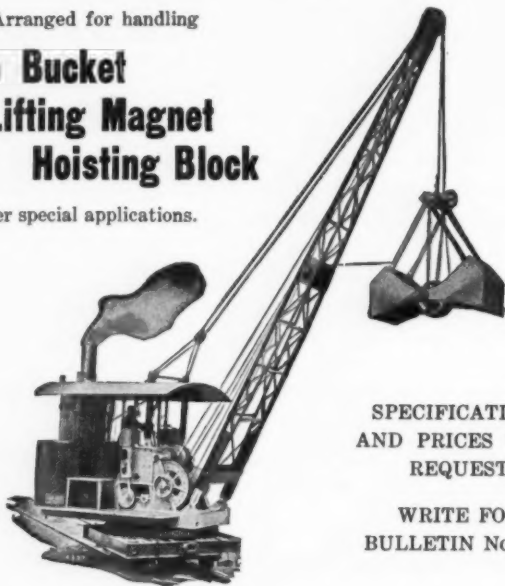
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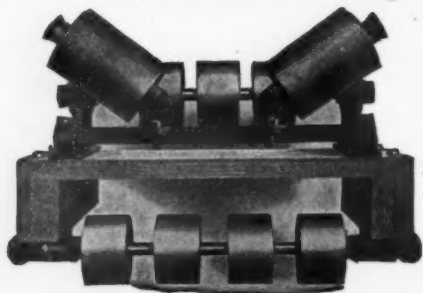
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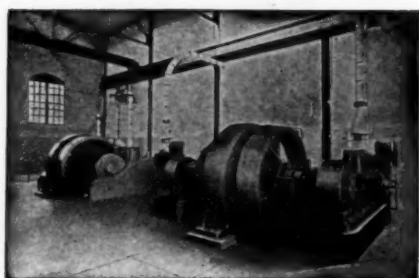
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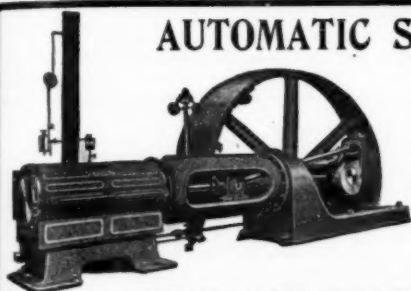


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Direct Connected to Generator or
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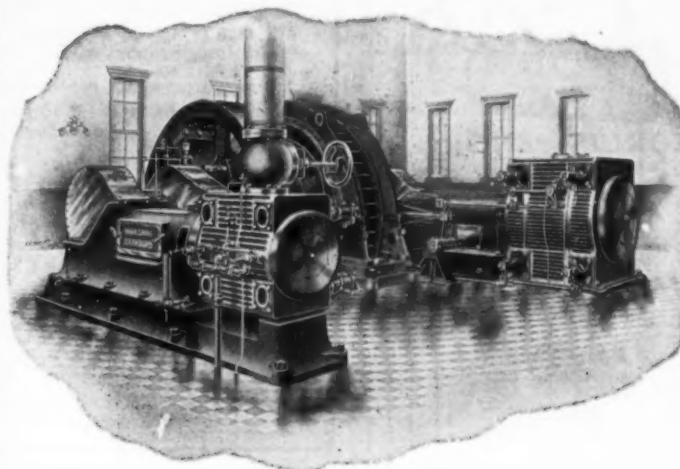
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Simple and
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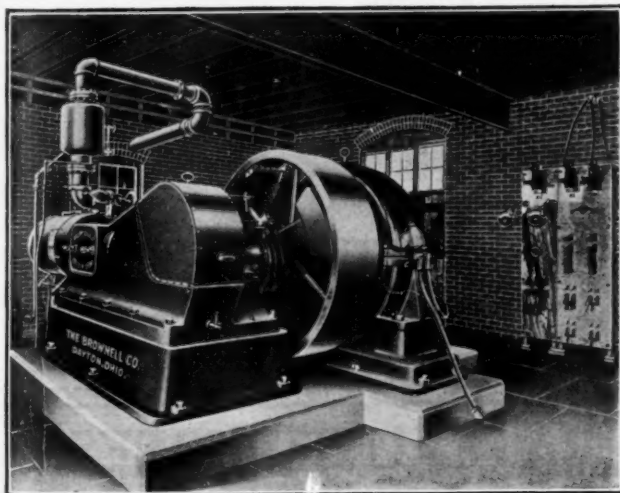
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can furnish you

Complete Power Equipment

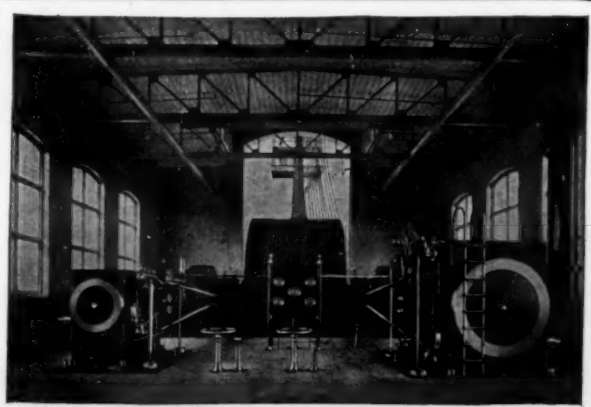
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BROWNELL Engines, Boilers, Feed-Water Heaters are unsurpassed. Continuous manufacture for 56 years guarantees the line.

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The C. & G. Cooper Company
MT. VERNON, OHIO.

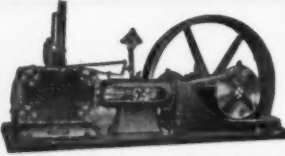
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 Boilers of all Styles and Sizes
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Engineers; Builders of Green's Fuel Economizers, Fans, Blowers and Exhausters, Steam Air Heater Coils, Waste Heat Air Heaters, Mechanical Draft, Heating and Ventilating and Drying Apparatus, Draft Dampers and Engines.

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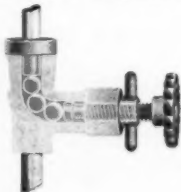
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GAS ENGINES

Mechanical Control—Power Regulation

Absence of Joints insures stability
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Widest Range in Adjustment of Engine Speed
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Specially adapted to close regulation under
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Unequalled for SAW MILLS,
 ELECTRIC LIGHT SERVICE,
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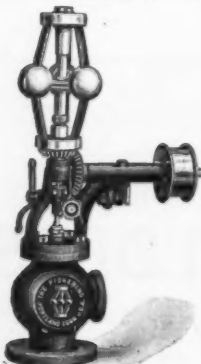


Fig. 33, Class B, represents Governor with Speed Ranger by use of which the speed of Engine can be varied while in motion. Sawyer's Lever is also included.

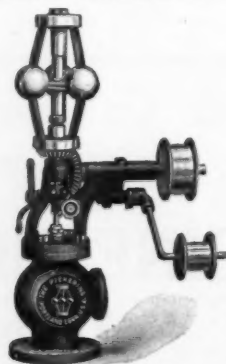
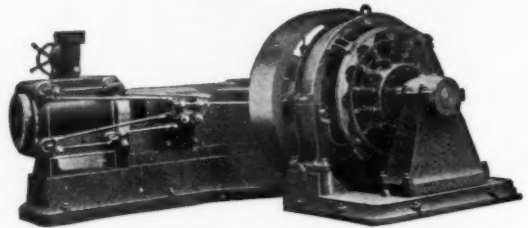


Fig. 34, Class A, to which is added the Automatic Safety Stop. This Stop closes valve when belt breaks or runs off Pulley, and is simple and certain in its action.

The PICKERING GOVERNOR COMPANY.
 PORTLAND, CONNECTICUT, U.S.A.

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Four-Valve Engines

have taken the lead in the race for **High Economy** in medium and high speed engines.

Repeated tests have shown that these engines will indicate a Horse-Power Hour with a **Lower Consumption of Steam** than required by any other engine of similar type, and, in fact, lower than the best records of slow-speed drop cut-off engines.

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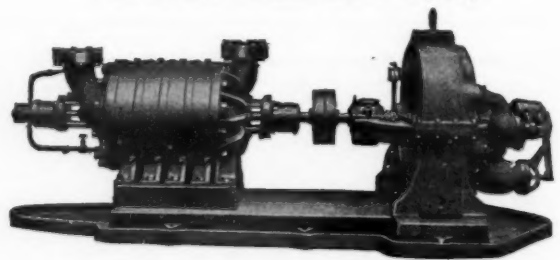
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65 to 1000 Gallons Rated Capacity



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32-45

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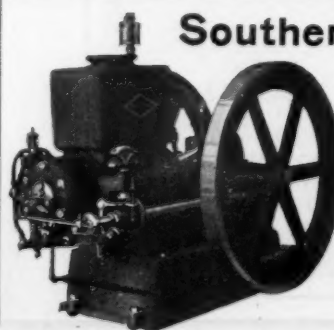
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1000 K. W. Direct Current Turbo Generators

Alternating Current Generators Turbo Blowers Turbo Pumps

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We make an improved heavy duty gasoline engine of all sizes for all purposes.

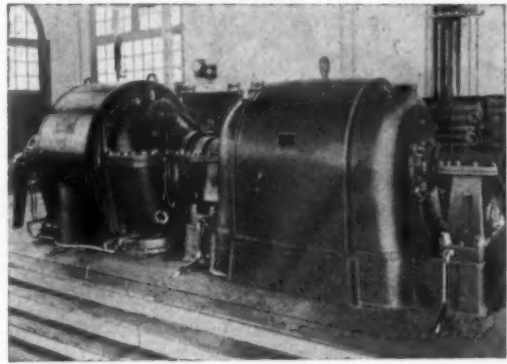
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Philadelphia, North American Building.

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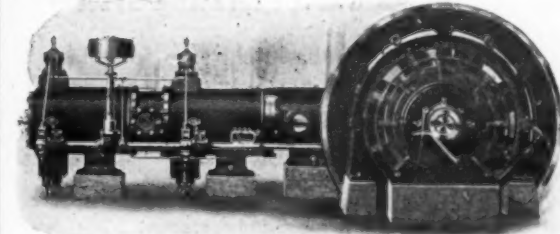
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Variable Lift Valves.

No Cylinder Packing to Blow Out and Ignition Under the Control of the Governor.

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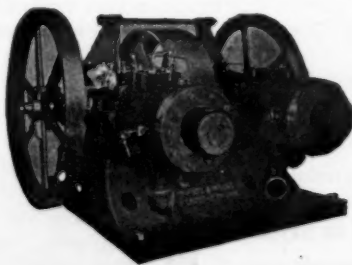
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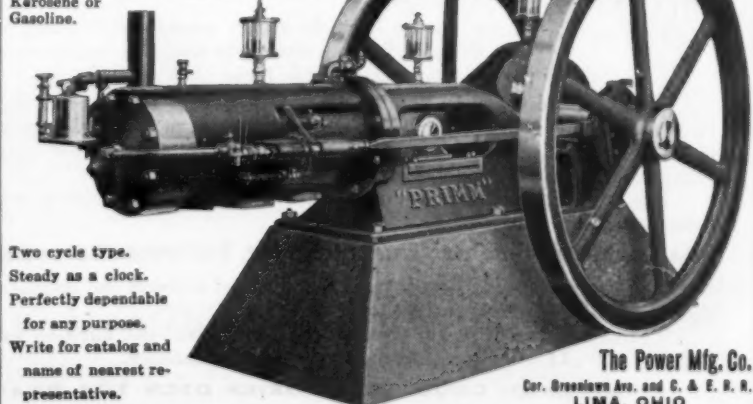
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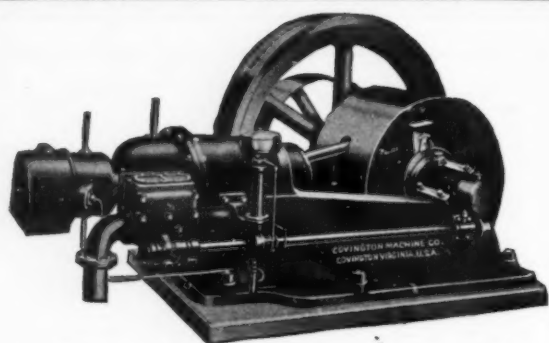


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Establish a permanent lower cost on your product by installing

COVINGTON OIL ENGINES

ASK YOUR CONSULTING ENGINEER

Dependable. Easily started, they are simple and reliable in operation, as they use no electric sparking device or other delicate parts. Operating at slow speeds, on low pressures and low temperatures, with strength to spare in every part, they are always ready to furnish their full rated loads.

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Economical. Each 100 Horse-Power Hours requires 13 gallons of fuel oil. With oil at 3 cents per gallon, the fuel cost for 100 Horse-Power is 39 cents per hour. The attendance charge is small. Covington Machine Co. Works: Covington, Va.

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You need Holophane Steel Reflectors. They will increase output by concentrating *all the light* on the work, where it is wanted. They will save you money by eliminating the glare and shadows that strain your workmen's eyes and cause spoilage and waste.

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Holophane Company, Ltd., 62 Front St., W., Toronto, Canada

Pat. Co.

GAS FOR POWER

The Loomis-Pettibone Gas Generating System

produces a clean, fixed gas absolutely free from tar.

The fire is always in sight of the operator, permitting an even distribution of fuel—no poking is required.

The patented down draught system keeps charging floor cool and free from noxious gases.

Lowest operating and maintenance cost—combined with highest efficiency—200,000 horsepower now in successful operation.

Write for Bulletin PM102-29.

Power & Mining Machinery Company

Cudahy, (Suburb of Milwaukee) Wis., U. S. A.

District Offices: New York, Chicago, Birmingham, El Paso, San Francisco

M 129.1

What Does Your Power Cost?

Merely make a rough estimate and then stop and consider how economical it would be for you to install

Fairbanks-Morse Oil Engines

(1 H. P. to 500 H. P.)

These engines will operate on kerosene, or low grade oil distillates costing as low as 2c. per gallon at the refinery.

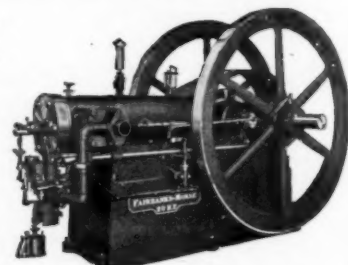
No question about their operating satisfactorily—we have been building them for years and they were not placed on the market until we proved them a success. Let us give you full information.

Write for Catalog No. 938DR.

Fairbanks, Morse & Co.,

Branches in Principal Northern Cities

Atlanta, Ga., Jacksonville, Fla.,
Richmond, Va., New Orleans, La.,
Main Office: 900 So. Wabash Ave.,
Chicago, Ill.



20 H. P. Type "N" Oil Engine



There's an OTTO Engine for Every Power Need

If you require from 40 to 100 horsepower, we offer you the OTTO Producer Gas Engine and Suction Gas Producer. One lb. to 1½ lbs. anthracite pea coal will produce a horsepower one hour. If you use steam or electric power you are paying from 30 to 50% more than you should.

Otto Gas and Gasoline Engines are widely used to take care of the peak load in inadequate steam plants. The special electric type and Otto Governor secures such close regulation that we guarantee the variation in voltage will not exceed 2% under changing load from ¼ to full load.

Engines for pumping—hoisting—portable outfits for contracting work driving air compressors, etc.

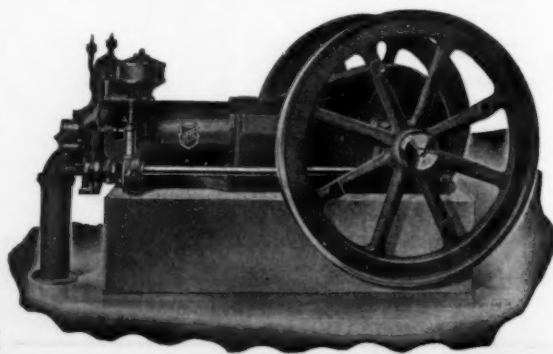
Otto Engines are higher grade than ever, but somewhat reduced in price.

You get the benefit of our increasing volume of business and improved manufacturing facilities. All sizes 1 to 120 horsepower.

Tell us about your power troubles—we have solved the question satisfactorily for over 100,000 OTTO users. Write today for our literature.

SEVERAL GOOD TERRITORIES OPEN FOR DEALERS

THE OTTO GAS ENGINE WORKS 3221 Walnut St. Philadelphia, Pa.



Dependable Electric Lighting with a Storage Battery

With isolated electric lighting plants, for use in districts where Central Station service is not available, the use of a storage battery means a continuous, dependable twenty-four hour service. By using a storage battery it is not necessary to constantly run an engine for generating current. A battery also provides current should an accident happen to either the engine or generator. The storage battery is therefore a most important part of an electric lighting plant.

The "Chloride Accumulator"

furnished with the electric lighting plants of this company is exactly the same type of battery used by the large electric lighting companies, electric railways, telephone and telegraph companies, the U. S. Government, etc. It is the very highest grade of storage battery manufactured and will give an absolutely dependable service.

Information on storage batteries or on complete electric lighting plants can be secured by addressing the nearest Sales Office.

THE ELECTRIC STORAGE BATTERY CO.

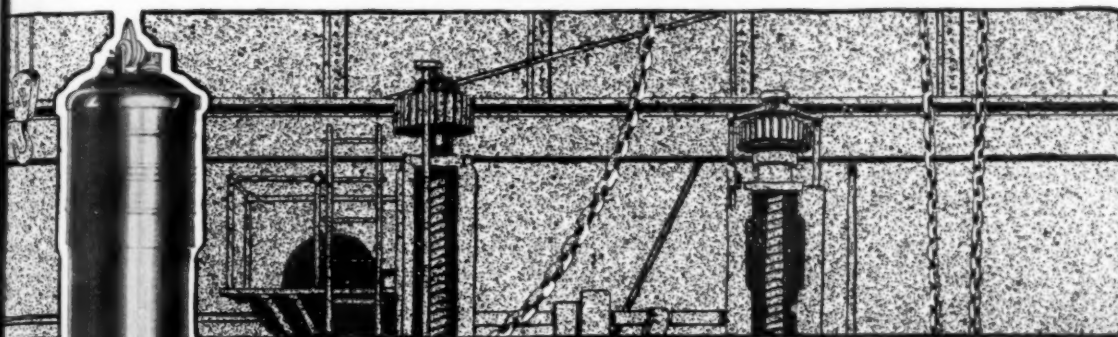
1888

PHILADELPHIA, PA.

1911

Atlanta Sales Office, Candler Building

New York Boston Chicago St. Louis Cleveland Toronto Denver Detroit Los Angeles Seattle San Francisco Portland, Ore.



Plan a Lighting System That Makes Scientific Management Possible

A good lighting system is essential to scientific management because in factories and mills artificial light is used from 10 to 40% of the working hours.

Under actual test good illumination increased production 10%, in addition, there was a marked improvement in the quality of the work.

Good illumination also lessens errors, spoilage, accidents and shut-downs, therefore quality and quantity is still further increased.

The Long Life Flame Arc Lamp (TYPE K)

is especially recommended because it gives a brilliant well diffused light over large areas, and because of its long electrode life and great economy. On a multiple circuit this lamp will burn for over 100 hours without attention, and even then it is necessary to change only one electrode. The novel method of ventilation keeps the globe clean throughout the long electrode life. This lamp is recognized as one of the most powerful lighting units known, and can be placed in any standard commercial circuit. It is substantially constructed and reliable in service.

Adequate illumination is engaging the attention of every thinking employer. The services of our experts on scientific illumination are at your command to assist you in your plans for a better system of lighting.

Give your employees an opportunity to become 100% efficient. Write for bulletin 4882 which describes this lamp in detail.

General Electric Company
Principal Office: Schenectady, N. Y.

¢ a burning hour ¢
100
candle power
Pintsch Mantle Light

THE SAFETY CAR HEATING
AND LIGHTING CO.
2 RECTOR ST., NEW YORK

WE HAVE MOVED
TO OUR NEW BUILDING
221-3 SOUTH SALISBURY STREET
RALEIGH, N. C.
AND AWAIT YOUR ORDERS
CAROLINA ELECTRICAL COMPANY

The Western Gas Construction Co.
FORT WAYNE, IND.
"Tonic" Lamp Posts
FOR ELECTRICITY OR GAS
Write for Particulars.

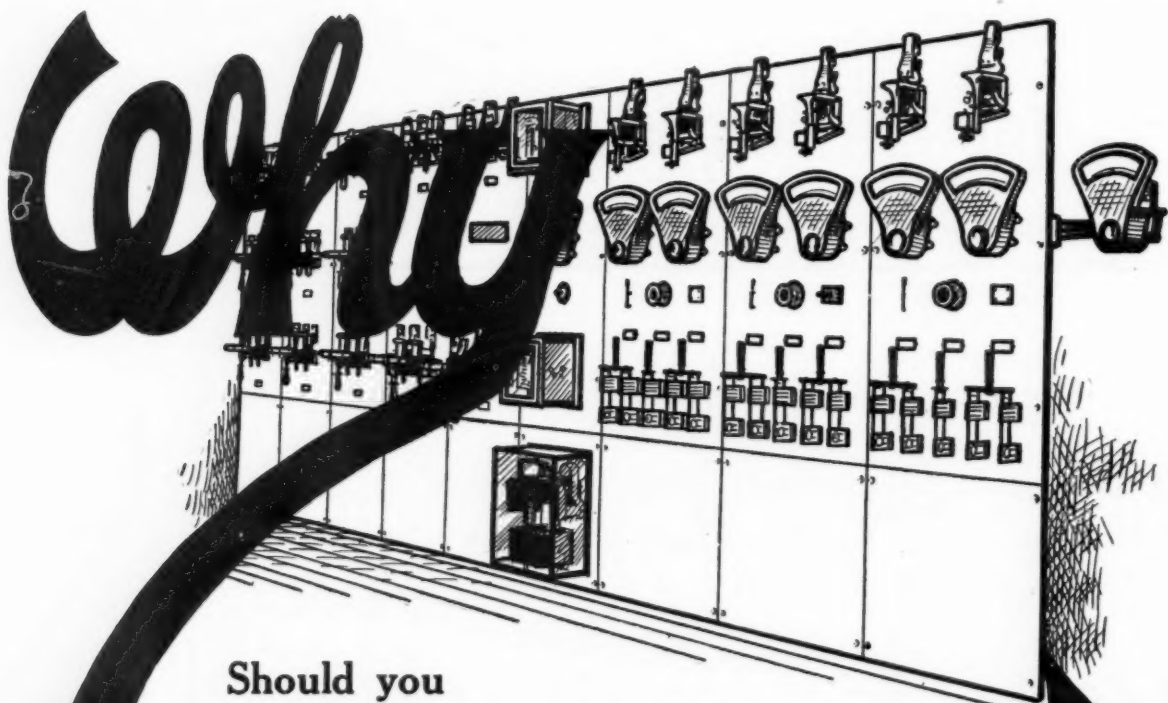
Aluminum Company of America
Formerly The Pittsburgh Reduction Co.
PITTSBURGH, PA.
ALUMINUM
Electric Conductors, Ingots, Bars, Plates,
Castings, Tubes, Sheets, Etc.

LITHOGRAPHED SIGNS
Plain, Embossed and Flanged
SOUTHERN CAN CO.
BALTIMORE, MD.

A small defect INSURE Such defects
may cause an YOUR can be found
explosion if not STEAM only by a
repaired in time BOILERS thorough inspection

Maryland Casualty Co.
Baltimore and North Streets
BALTIMORE
Surplus and Reserves for Policyholders over
\$5,500,000.00

Our large corps AGENTS Inspections
of inspectors are made regularly,
men of long experience and EVERYWHERE promptly and
ability thoroughly



Should you
investigate

Fort Wayne Switchboards?

You are looking for absolutely the **best** board you can get for your money. Well, that's one reason.

Maybe your system of distribution or control requires a switchboard "out of the ordinary." Perhaps its location demands one of special construction. Our engineers can solve these problems for you **successfully** and there is no charge for their service.

Of course we are busy, but we have an excellent equipment, and our system works so smoothly we can get your job out **promptly**.

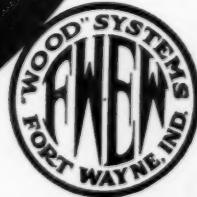
There are many other reasons—material, construction, workmanship, instruments, etc., and if you are interested it will certainly pay you to send for our Switchboard Bulletins.

FORT WAYNE ELECTRIC WORKS

of General Electric Company
"Wood" Systems

1617 Broadway, Fort Wayne, Indiana

Atlanta, Boston, Charlotte, Chicago, Cincinnati, Cleveland,
Dallas, Denver, Grand Rapids, Kansas City, Madison
Milwaukee, New Orleans, New York, Philadelphia,
Pittsburgh, San Francisco, St. Louis
St. Paul, Seattle, Syracuse



The Greatest Fan and Small Motor Proposition in the World for Dealers

A bold statement but true. We quote from the testimonials of our regular dealers who have jumped in and built up a veritable business mountain in

"Standard" Fans and Motors

After proving to our own satisfaction that we had finally and utterly PERFECTED our product we began to tell the Public about it through national advertising.

And the Public responded. And the goods stood the test of time and service. You cannot sell your customers *better* fans and motors, and you cannot receive a better selling contract than we will give you. You cannot sell a line of goods for which the demand is already more fully CREATED through advertising than in the case of these quality goods.



Robbins & Myers "STANDARD" Motors and Fans

Cash in on "Standard" Reputation and Advertising

You might as well be reaping the sales-harvest caused by our reputation and publicity.

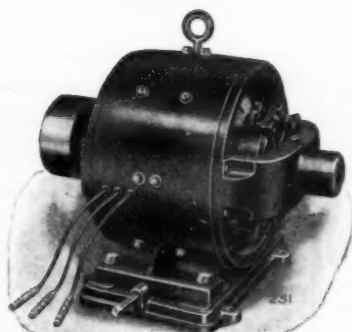
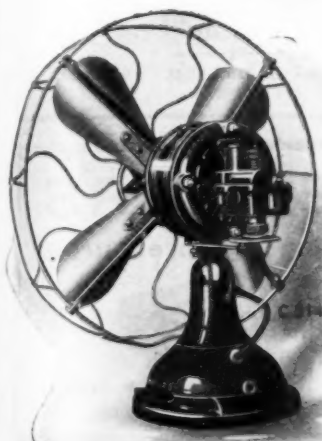
Why not write today for information regarding the best dealer's contract ever given. A postal or brief note will do and incurs no obligation.

Fans for Every Purpose

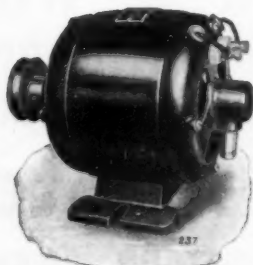
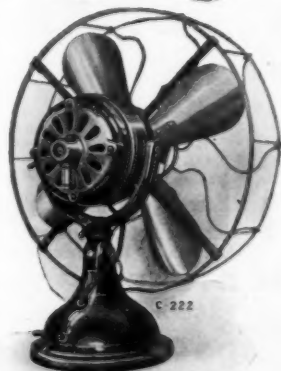
Ceiling, desk, bracket, oscillating and ventilating. Direct and alternating current.

Small Motors for Every Purpose

Direct current 1-30 to 15 H. P. for all purposes. Alternating current 1-30 to 1-4 H. P.



Direct Current 4 H. P.
Motor Frame No. 64.

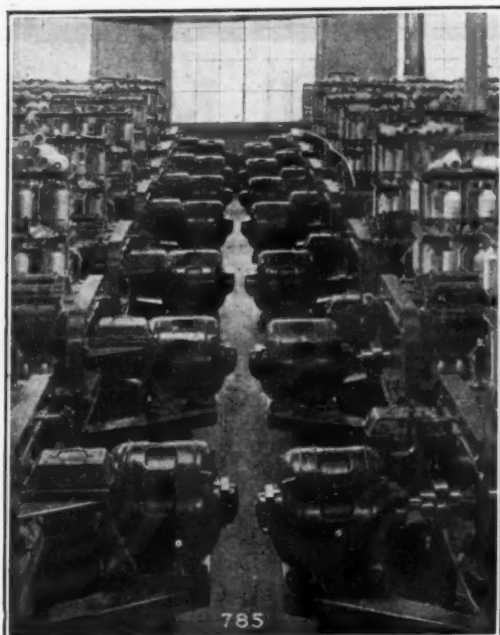


Alternating Current 1-8
H. P. Motor Frame No. 17.

The Robbins & Myers Co.
Springfield, Ohio

BRANCHES:

New York Chicago Boston Philadelphia St. Louis Rochester



COMPARE THIS
WITH THE USUAL MEDLEY OF BELTS AND SHAFTING
of mechanical drive.

Crocker-Wheeler motor-drive means primarily—Better light—Greater cleanliness—Fewer damage suits from injured employees.

It also means Greater output and Lower maintenance charges.

It will pay you to let us tell you why.

CROCKER-WHEELER CO., Ampere,
N. J.

Birmingham Baltimore Charlotte Washington, D. C. Philadelphia
Local Selling Representative: Tel.-Electric Co., Houston, Texas



Incandescent Lamps

Unexcelled for Life, Brilliance or
Uniformity

Motors and Dynamos

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MOLONEY TRANSFORMERS

MOLONEY ELECTRIC CO., ST. LOUIS, U. S. A.

WINDSOR ONT., CANADA.

LOOKOUT BOILER & MFG. CO.

MANUFACTURERS OF
PORTABLE AND HORIZONTAL TUBULAR
BOILERS

STACKS, CASTINGS, TANKS, Etc.
CHATTANOOGA, TENNESSEE

BOILERS TANKS STACKS

Pumps, Heaters, Injectors, Engine
Supplies and Repairs for Mills,
Hotels, Public Works. Try
LOMBARD IRON WORKS, Augusta, Ga.

THE WALSH & WEIDNER BOILER CO.
MANUFACTURERS OF HIGH-GRADE

BOILERS
CHATTANOOGA, TENN.

Write us for Prices before placing your order

THE BABCOCK & WILCOX COMPANY

85 Liberty Street, NEW YORK

Babcock & Wilcox—Stirling—Rust

Water Tube Steam Boilers

STEAM SUPERHEATERS MECHANICAL STOKERS

WORKS—BAYONNE, N. J.

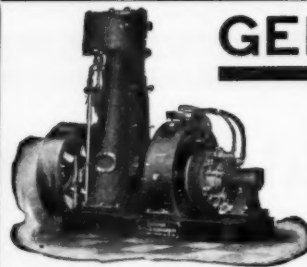
BARBERTON, OHIO

BRANCH OFFICES

Atlanta.....Candler Building
Boston.....35 Federal St.
Chicago.....Marquette Building
Cincinnati.....Traction Building
Cleveland.....New England Building

Denver.....435 Seventeenth St.
Havana, Cuba.....116½ Calle de la Habana
Los Angeles.....American Bank Building
New Orleans.....Shubert Arcade
Philadelphia.....North American Building

Pittsburgh—Farmers' Deposit Bank Building
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Salt Lake City.....313 Atlas Block
San Francisco.....99 First Street
Seattle.....Mutual Life Building



GENERATORS

STEAM OR GASOLINE OPERATED

With one of these machines you can produce electric current on the most economical basis. They are very simple in construction, reliable, and require but very little attention.

Send for our prices, descriptive bulletins and testimonial booklet.

Engberg's Electric & Mechanical Works

Vine St., St. Joseph, Mich., U. S. A.

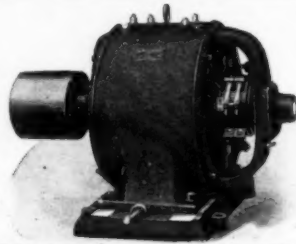
2½ to 50 Kilowatt.

FACTORY EQUIPMENT

High-grade Generators and
Motors for all purposes.

We have specialized on the
electrical equipment of factories
for 23 years. Write us.

The Triumph Electric Co.
CINCINNATI, OHIO



HEADQUARTERS

FOR ALL THINGS ELECTRICAL

At a Little Less Than You Pay Elsewhere Prompt Service

LEE ELECTRIC COMPANY
BALTIMORE, MD.

For the
FACTORY
RESIDENCE
OFFICE BUILDING

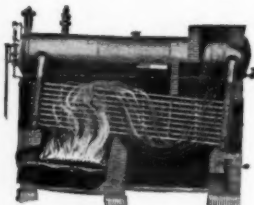
Electrical Equipment, Wiring Supplies, Fixtures

Advise us of your requirements. Our prices interest.

PIEDMONT ELECTRIC CO., Electrical Bldg., Asheville, N. C.

E. KEELER COMPANY, Established 1864

WILLIAMSPORT, PA.



WATER TUBE BOILERS

All Wrought Steel Construction.

TUBULAR AND INTERNAL FURNACE
BOILERS

BOSTON
NEW YORK

PHILADELPHIA
PITTSBURGH

CHICAGO
RICHMOND

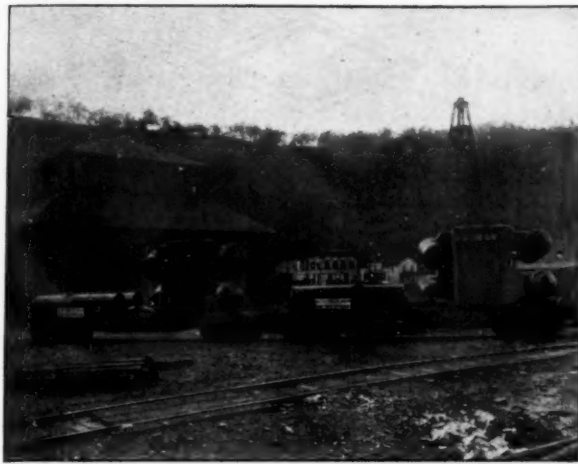
HEINE Water Tube BOILERS

For every service requiring high pressure
steam

Heine Safety Boiler Co.

St. Louis, Mo.

14 E. 4th St., Charlotte, N. C. 608 Godchaux Bldg., New Orleans
Shops at St. Louis, Mo., Phoenixville, Pa.



Two 500 H. P. Units Loaded for Shipment.

Geary Water Tube Boilers

are made in sizes up to 650 H. P. Their design and construction afford maximum steaming capacity, extreme durability and accessibility for cleaning. Recently we have added to our plant a large modern designed boiler shop with up-to-date equipment, especially adapted to build the "Geary" boiler. We are in a position to handle any contract, large or small, in units from 30 to 650 H. P. promptly. Be sure you have all the facts on the "Geary."

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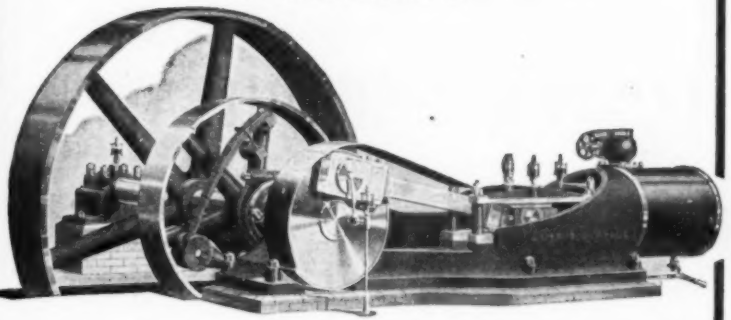
Oil City Boiler Works

OIL CITY, PENNA.

NEW YORK BOSTON PITTSBURGH DENVER
PHILADELPHIA CHICAGO SALT LAKE CITY

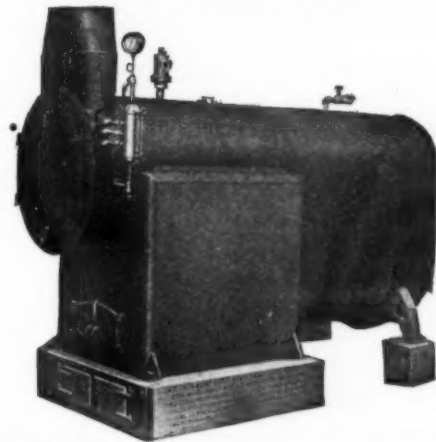
AMES IRON WORKS

MANUFACTURERS OF



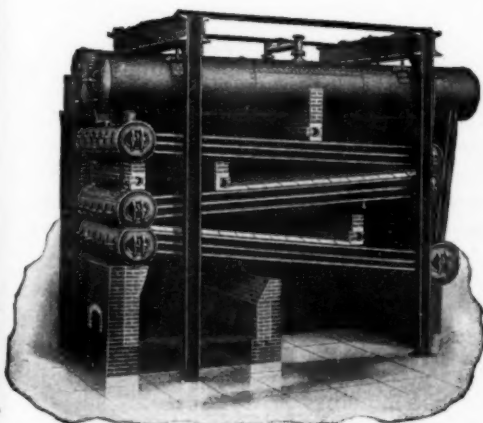
ENGINES AND BOILERS

WORKS—OSWEGO, N. Y.



AGENCIES THROUGHOUT THE SOUTH

A STEAM PRODUCER VOGT WATER TUBE BOILER



As a satisfactory, efficient steam producer, our water tube boiler stands out among the different makes of boilers throughout the country.

Complete combustion. Arrangement of tubes gives the water very rapid circulation. Steam capacity

greatly enhanced by the hot gases outside the tubes.

Many other features of interest to the boiler users. Let us send catalogue.

Henry Vogt Machine Company

Louisville, Ky.



The Improved ROOT WATER TUBE BOILER

Embodying to the highest degree Fuel Economy, Easy Steaming Qualities, Safety, Low Cost of Maintenance and Large Overload Capacity.

Manufactured by

ABENDROTH & ROOT MFG. CO.

Works, Newburgh, N. Y.

Sales Offices
50 Church Street, New York City.
832 Commercial Nat. Bank Bldg., Chicago, Ill.

THE CASEY-HEDGES CO. Chattanooga, Tenn.

Water Tube
Marine
Return Tubular

BOILERS

SPECIAL PLATE AND TANK WORK

Offices—No. 719 Hennen Bldg., New Orleans, La.; Praetorian Bldg., Dallas, Texas.
Main Offices and Works—Chattanooga, Tenn.

HARTLEY BOILER WORKS

BUILDERS OF
HIGH-GRADE

BOILERS

Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate Iron Work, Boiler Fronts, Grate Bars, Kiln Wheels, all kinds of Castings made to order.

MONTGOMERY, ALA.

ALLEGHENY STEEL CO.

Manufacturers of

STEEL AND CHARCOAL IRON

"RELIANCE" BOILER TUBES

Steel Plates and Sheets

PITTSBURGH, PA.

Boiler Capacity Enlarged

By Installing a

FOSTER SUPERHEATER

Look at it in another way: In addition to saving fuel and steam, our superheater will enlarge your boiler capacity without increasing the number of boilers or adding to fuel consumption. In a crowded plant this is a great advantage.

Six boilers equipped with superheaters will do the same work as seven not equipped.

We will gladly go into the whole subject with any interested power plant owner.

POWER SPECIALTY CO.

111 Broadway, New York

Southern District Office, Brown-Marx Building
Birmingham, Ala.



THAT'S THE ANSWER.

¶ A builder once said that as a matter of fact there were only two kinds of houses—those built to sell, and those built to live in.

¶ It's pretty much the same in the matter of MECHANICAL RUBBER GOODS. There are ten tons of stuff made to sell where there may be only one ton made for service.

¶ We passed up the ten-ton class 51 years ago. Looking back over the intervening years we can find no reason to regret taking the short end. Moreover, we have never had to install a "complaint and adjustment department," which seems a necessary adjunct of the ten-ton business.

¶ Which accounts, in a measure, for the fact that we are never ashamed to put our name and trade-mark on anything that leaves our plant. That means more to the consumer and ourselves than can be measured in mere dollars and cents.

N. J. CAR SPRING & RUBBER CO. JERSEY CITY, N. J.

Agents in All Principal Cities.

Established 1858.



HOPPES STEAM SEPARATORS

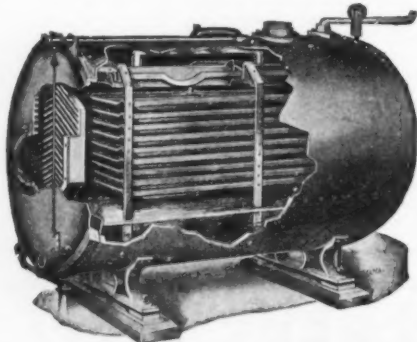
Will not only deliver 99% dry steam to your engine but their large receiver capacity will take care of sudden flushes of water and afford ample steam storage for use during sudden "peak loads." All sizes and types to suit requirements.



HOPPES FEED-WATER HEATERS

Conserve the Fuel Pile—Protect Boilers
and Save the Dollars

The extra large heating and lime-catching surface, and the method of bringing the steam into direct contact with the water flowing in thin films, are the reasons why Hoppes Heaters give the highest efficiency and economy where others fail. Steel and Cast Iron Constructions. All sizes.



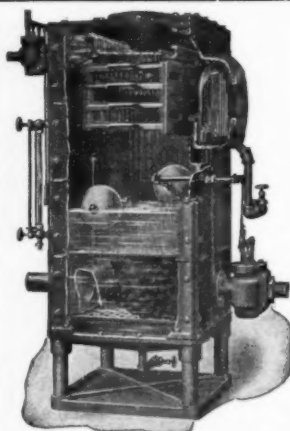
HEATER—CAST IRON CONSTRUCTION

Live Steam Feed-Water Purifiers—Oil Eliminators—Cast Iron Exhaust Heads

ILLUSTRATED CATALOGS FREE

The Hoppes Mfg. Co.,

97 LARCH ST.
SPRINGFIELD, OHIO



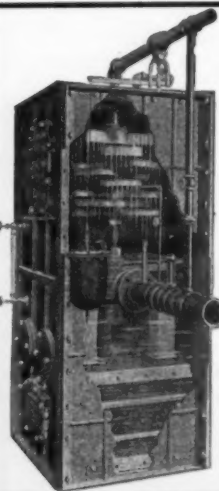
FOR ECONOMY use the Blake-Knowles Open Feed Water Heater

It combines the functions of a Feed Water Heater, Oil Separator, Purifier and Automatic Receiver.

Increased Boiler Efficiency and Decreased Labor and Fuel Costs are the results of its use.

Write for Bulletin BK847-29.

THE BLAKE & KNOWLES STEAM PUMP WORKS
NEW YORK OFFICE, 115 BROADWAY
WORKS, EAST CAMBRIDGE, MASS.
BRANCH OFFICES IN ALL LARGE CITIES
B119.1



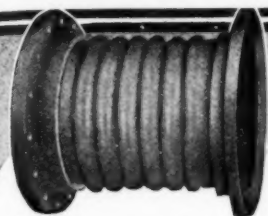
The Organ Open Feed Water Heater and Purifier

combining in one apparatus—
Feed Water Heater and Purifier,
Oil Separator, Drip Receiver and
Expansion Tanks.

The simplest and most economical
Feed Water Heater.

Write for Booklet.

The Exeter Machine Works
PITTSBURGH, PA.



Our patented joint which insures equal distribution of expansion on each corrugation.

Pipe Troubles Can Be Eliminated

by the use of

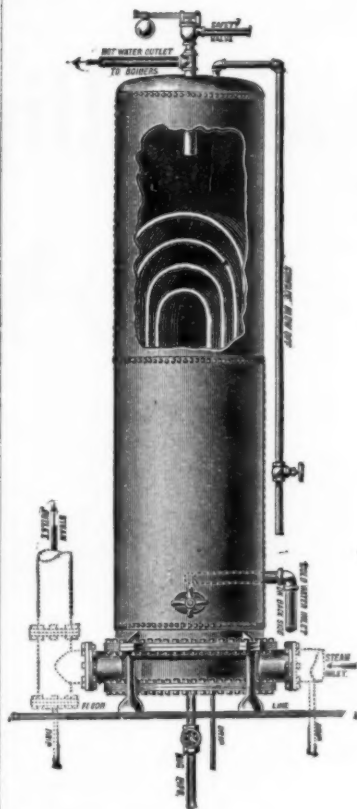
**Badger's
Copper Expansion
Joint**

Will take care of the expansion in lines of steam pipe.
Will absorb vibration between engine and piping.

WRITE FOR FULL
PARTICULARS

E. B. Badger & Sons Co.
63-75 Pitts Street Boston, Mass.

"THE BERRYMAN" Feed-Water Heater and Purifier



Universally acknowledged by engineers to be the most perfect device yet invented to heat water by means of waste or exhaust steam.

Besides being used on boilers, it is equally suited to heating water for bakeries, bleacheries, dye works, laundries, &c.

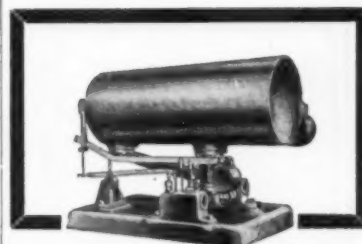
THE BERRYMAN FEED-WATER HEATER is improved from time to time and is always in the lead.

Ask for catalogue and particulars.

THOMAS McADOO

125 N. 4th Street, PHILADELPHIA, PA.

I. B. DAVIS & SON, Makers
Hartford, Conn.



"Detroit" RETURN TRAPS

1911 Model

Keep steam lines free of condensation, automatically returning it to the boiler *hot* without pumping.

Save 90% of the steam required to operate a pump.

Why "cool down" the condensation to accommodate a pump? It costs money to heat feed water.

Condensation is the best kind of feed water.

By using "Detroit" Return Traps you put condensation into the boiler at practically the same temperature at which it is condensed. Not a drop is wasted. None of the heat is lost.

*Boller Feed Pumps are good things for the coal dealer.
"Detroit" Return Traps are good things for the user.*

Where shall we mail trap book No. 266-MR? It is brim full of information valuable to operators of steam plants.

AMERICAN BLOWER COMPANY
DETROIT, MICH.
U. S. A.

Inspects boilers to guard against explosion.

Insures property against this hazard.

Also against Life and injuries to persons.

Makes specifications for new steam plants.

Inspection Bureaus at

BALTIMORE, MD.,
PHILADELPHIA, PA.
CHARLESTON, S. C.,
ATLANTA, GA.,
BIRMINGHAM, ALA.,
NEW ORLEANS, LA.,

18 66
**Hartford
Steam Boiler**



**Inspection and
Insurance Co.**
Hartford, Ct.

Alters old ones in the interest of economy.

Maintains over 200 inspectors throughout the country.

Over 100,000 steam boilers under supervision.

Assets Jan. 1, 1908,
\$4,060,194.80.

LAWFORD & McKIM, General Agents
CORBIN & GOODRICH, General Agents
W. S. HASTIE & SON, General Agents
W. M. FRANCIS, Chief Inspector
L. V. CLARK & CO., General Agents
P. F. PESCU, General Agent

Manufacturers Record, the Medium for Machinery Advertisements.

The Otis Tubular Feed Water Heater Oil Separator and Purifier

Is guaranteed to deliver the water to the boiler at boiling temperature (210 to 212 degrees). It will also extract the oil from the exhaust, so that the steam after passing through the heater may be used for other heating purposes and the condensed water returned to the boiler without any additional elimination.

Give the Otis a trial, and if you don't find it satisfactory we will pay the freight and carriage both ways.

The Stewart Heater Co., 2 N. 1st Ave. Buffalo, N.Y.



WHEELER CONDENSER & ENGINEERING CO.

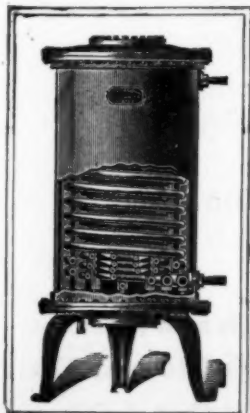
Manufacturers of Surface, Jet and Barometric Condensers, Feed Water Heaters, "Vols" Combined Surface Condenser and Feed Water Heater, Rotative Dry Vacuum Pumps, Centrifugal Pumps, Edwards Air Pumps, Wheeler-Barnard Water-Cooling Towers.

CARTERET, N. J.

NEW ORLEANS

NEW YORK

ATLANTA



FUEL MONEY TIME BOILERS

Would you save them?

THEN USE A

NATIONAL FEED-WATER HEATER

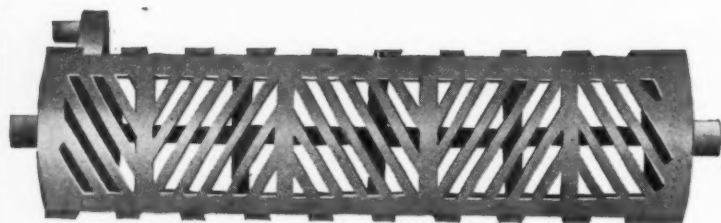
It delivers water to the boiler at 200° to 212° Fahrenheit by utilizing your exhaust steam. Its value must be clear to everyone who uses or is acquainted with steam boilers. Let us send our catalogue.

The National Pipe Bending Company 97 Lloyd Street New Haven, Conn.

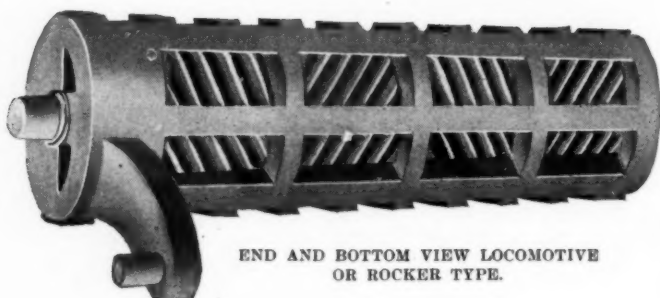
*Decrease Your
Fuel Bill*

*Increase Your
Steam Supply*

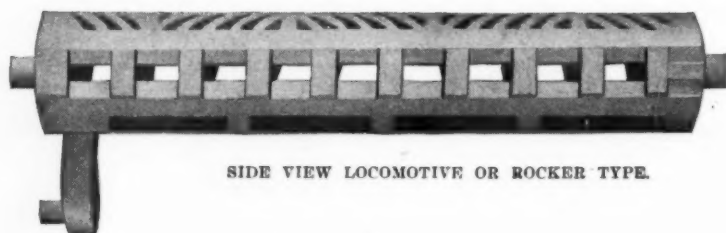
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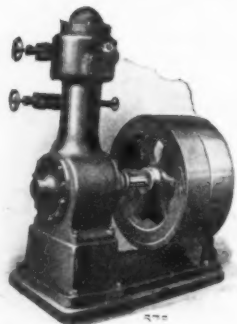
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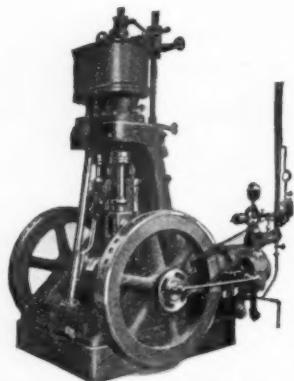
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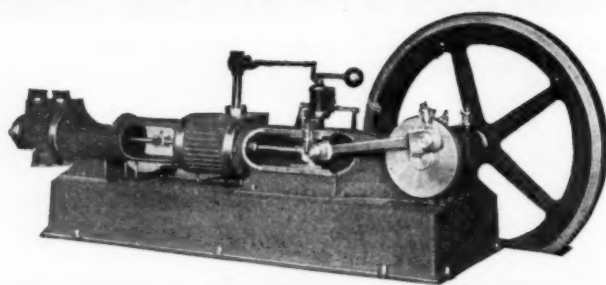
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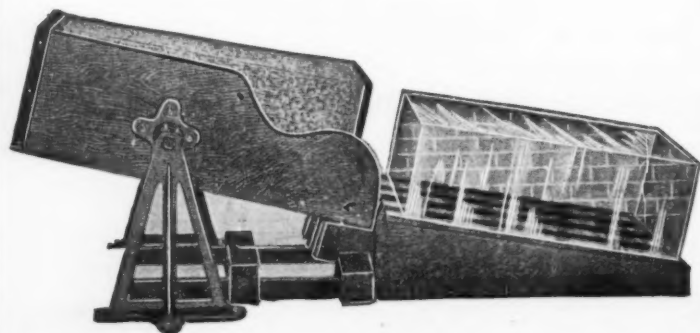
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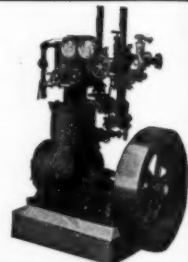
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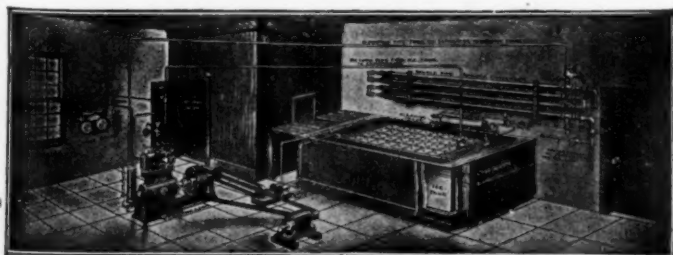
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The above good points cannot be found in any other covering I know of. I have found this covering so satisfactory that I use it entirely on our low-pressure as well as the high-pressure work, and find it the cheapest in the long run, both in cost of material and condensation in mains.

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(Signed) Jas. E. Davidson, Supt.

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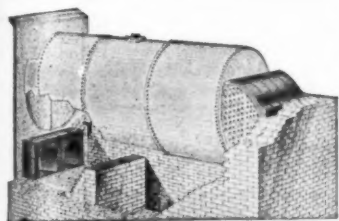
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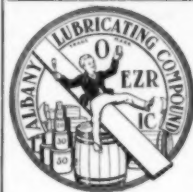
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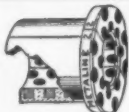
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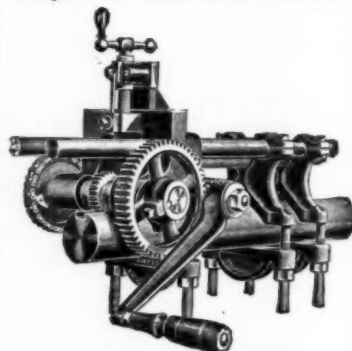
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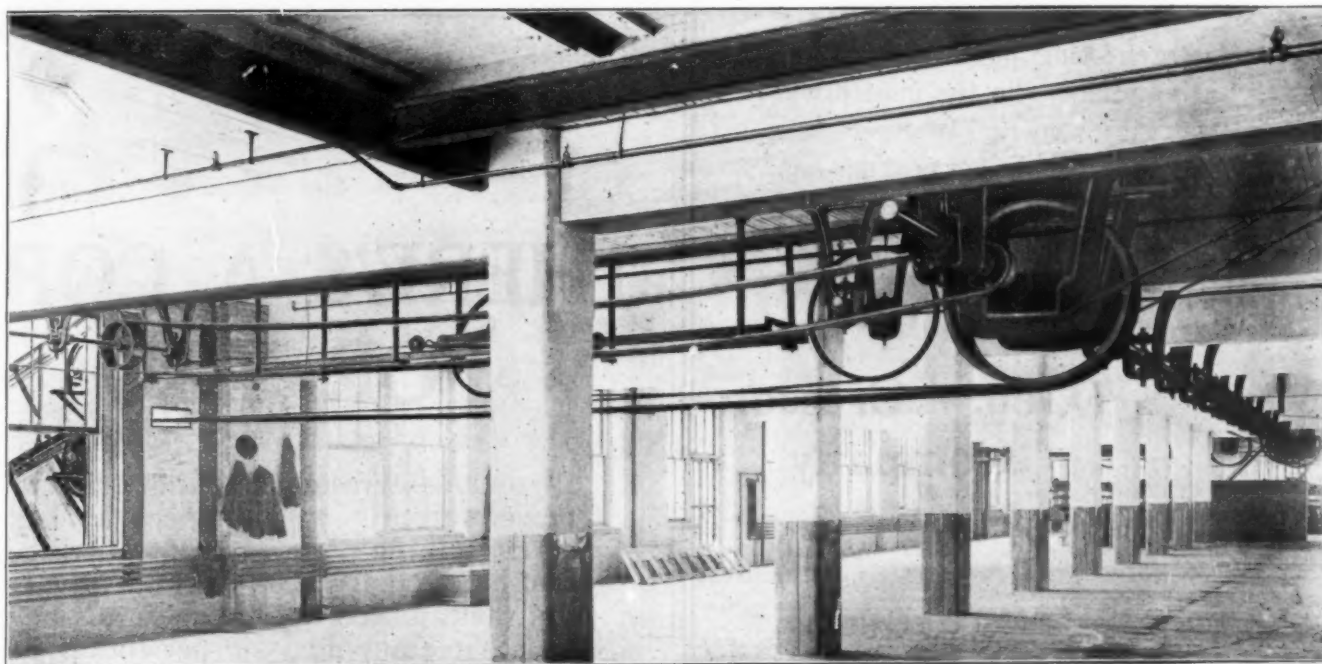


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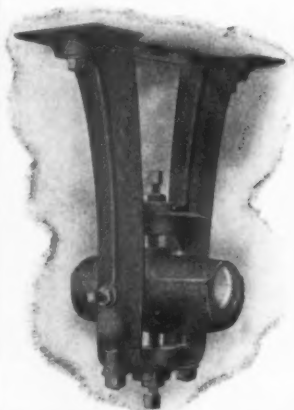
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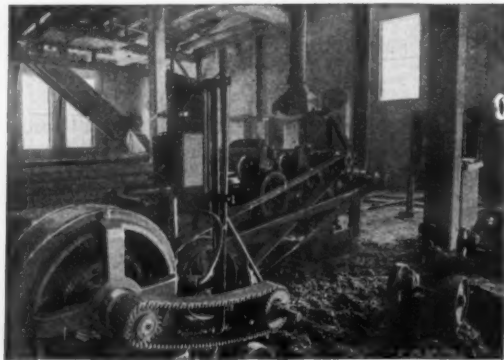
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A-8



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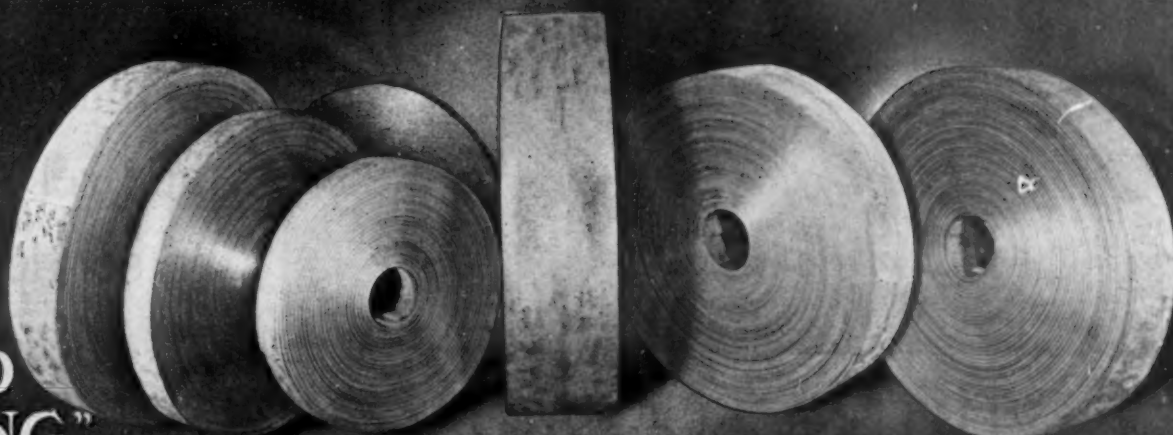
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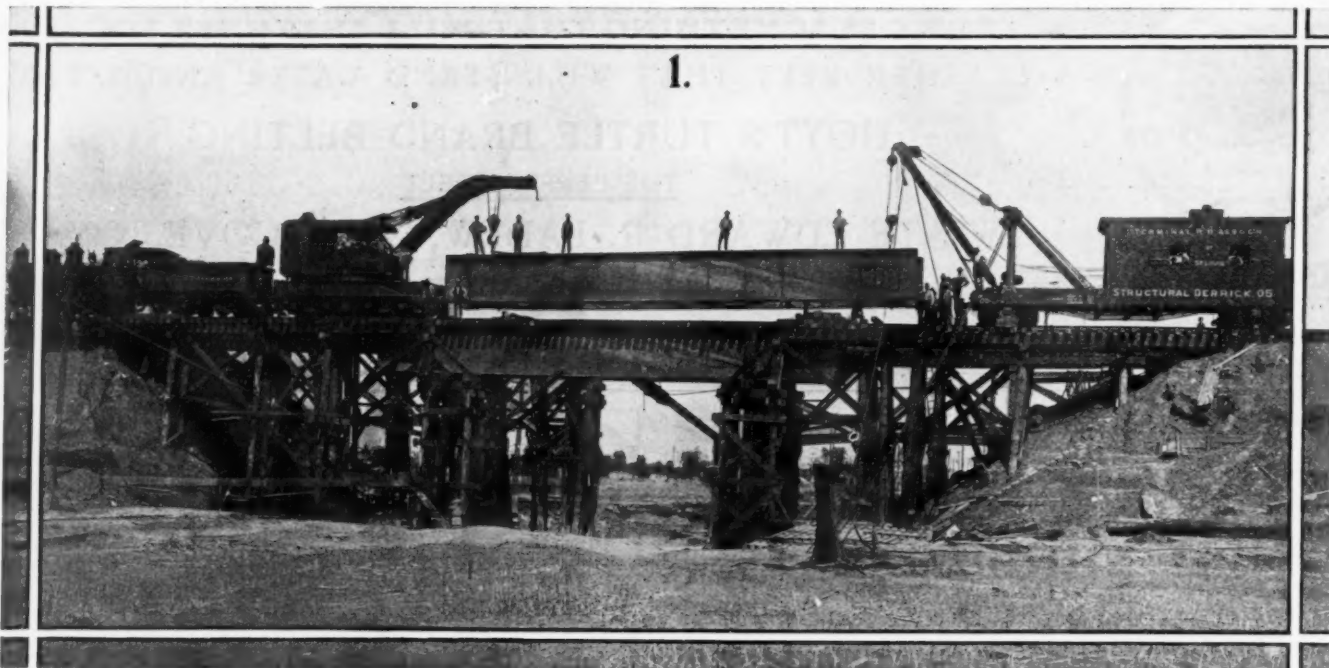
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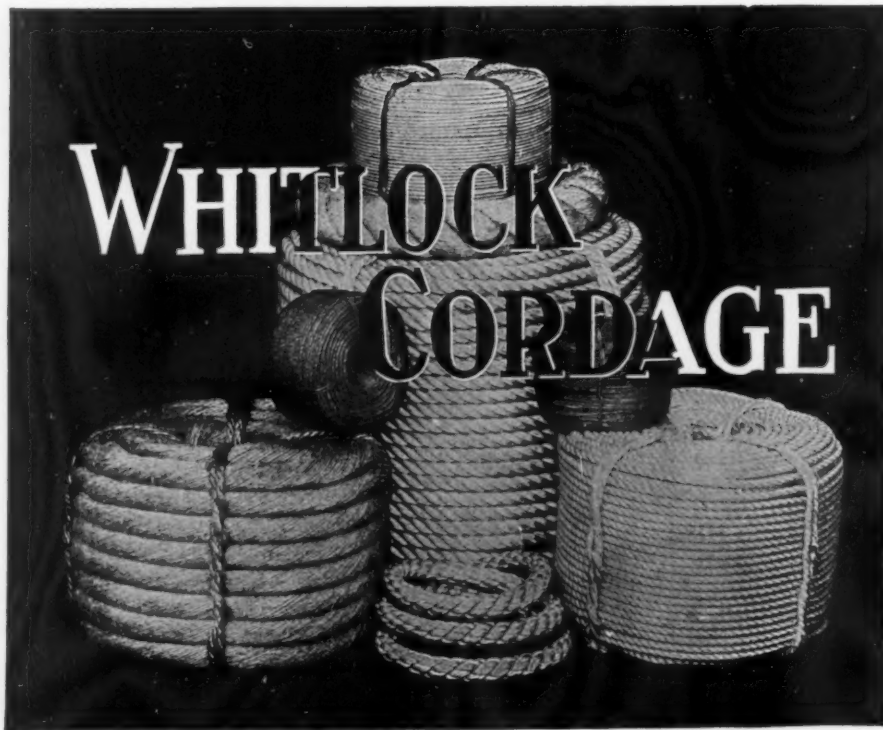
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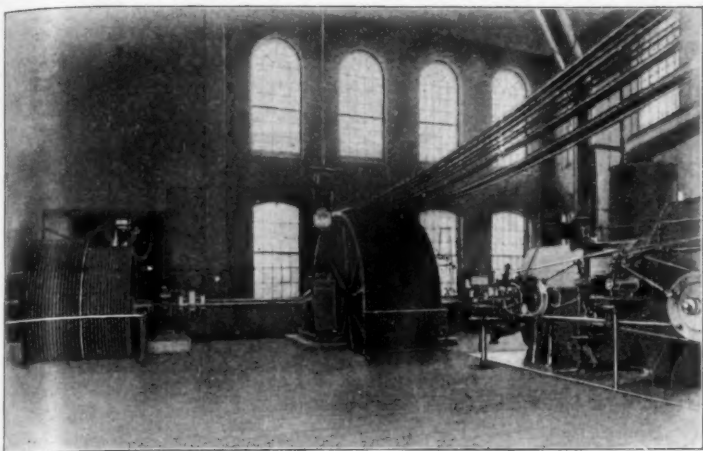
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comments a Southern buyer of mill supplies. And isn't this the vital point in all rope transmission problems—the *whole* question of economical transmission? Isn't "lasting power" the basis on which you select the rope you use? Manufacturers who have tested Plymouth Transmission rope say it *can't* be beaten.

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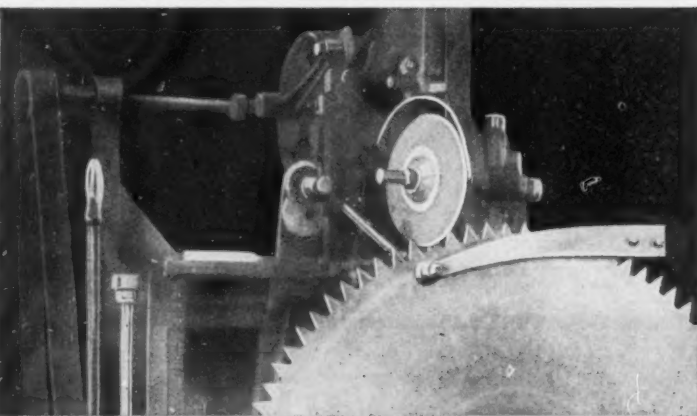
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DO THREE HOURS WORK IN ONE**

Aloxite Saw Gumming Wheels

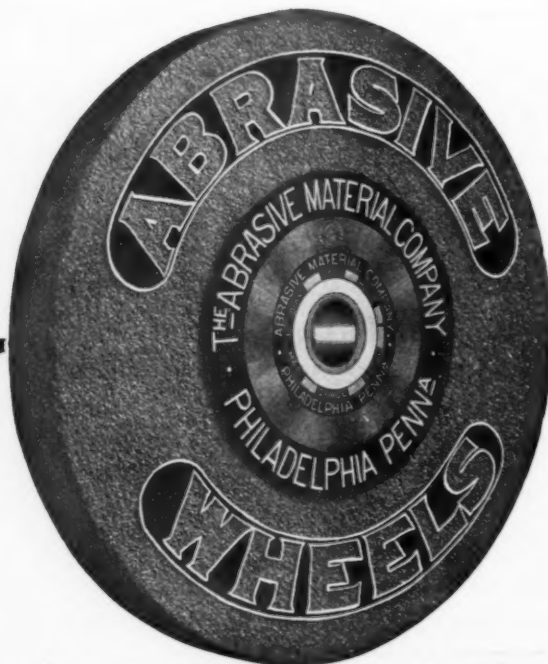
Enable the filers in a hardwood mill in Davis, West Va., to gum seven circular saws in an hour.—It took them three hours to do the same work under exactly the same grinding conditions, using other wheels.—Aloxite wheels are saving them two hours in three, and there is no heating or case hardening the saws—just clean, fast, cool grinding.

*A trial wheel will show your filers the
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To the old "grinder" who in his time has used many kinds of grinding wheels—that "strikes home."

One of the serious faults in the many makes of grinding wheels is that the bond which holds the particles together clogs the pores, and consequently those wheels "glaze over" the work—just like that trolley car slipped—even though the best abrasives are used in their manufacture.

The strong, crowning feature of the success of

ABRASIVE FAST GRINDING WHEELS

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But that's only one reason why they don't merely grind, but cut—cut fast and are durable.

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We mean the finest material,
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PROVIDENCE, R. I.

Combined Multiple Punch and Shear
Three Tools In One

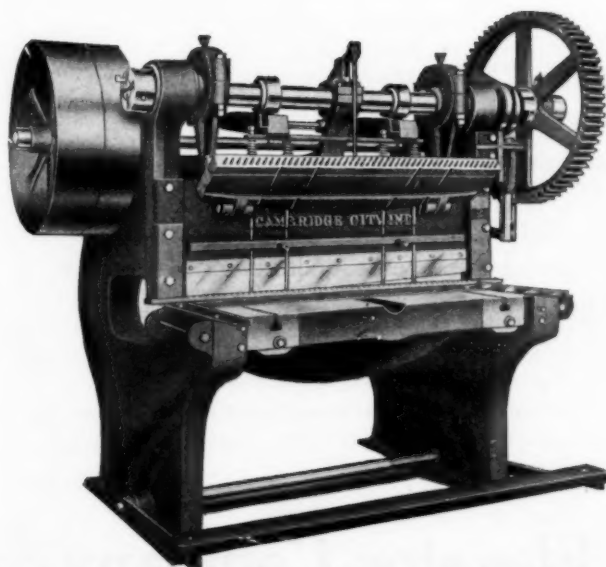


Fig. 1 shows the punch-cross-head disengaged, thus converting the machine into a regular shear for shearing only.

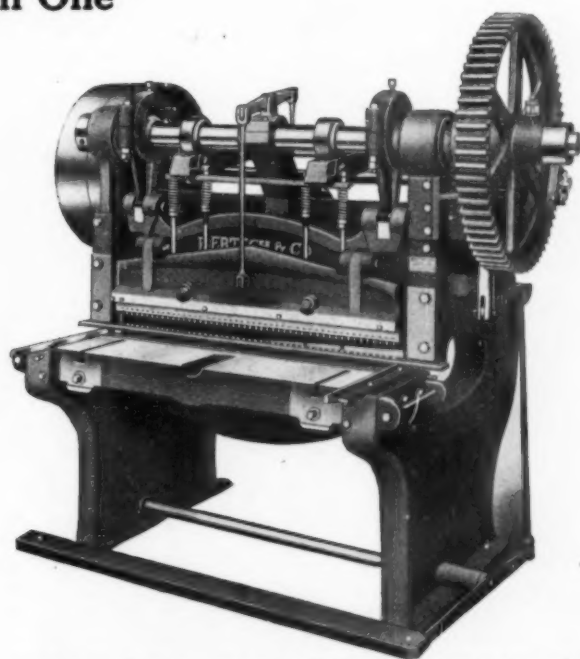


Fig. 2 shows the punch-cross-head locked in position for punching and shearing in one operation.

These cuts show our Patented Combined Multiple Punch and Squaring Shear, which will shear and punch a sheet in one operation, punch only, or shear only when the punch-cross-head is disengaged, thus combining three tools in one. It therefore saves floor space, time, power and labor. WRITE FOR CATALOG "E"

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Rise—1st to 12th Floor—144' 0".

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Combination Passenger and Freight Elevators.

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Otis Drum Type Machine.

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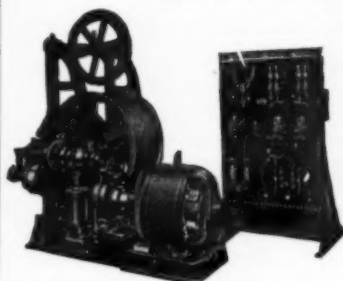
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groove meas-
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teenths may be cut.
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thick. It will cut
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either with or cross
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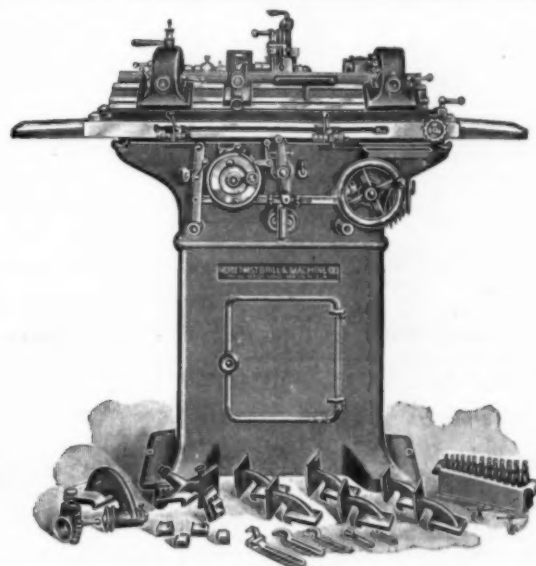
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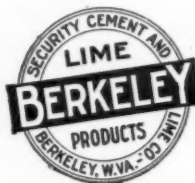
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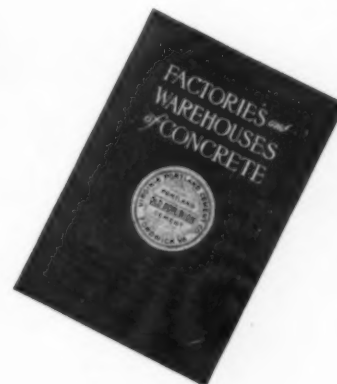
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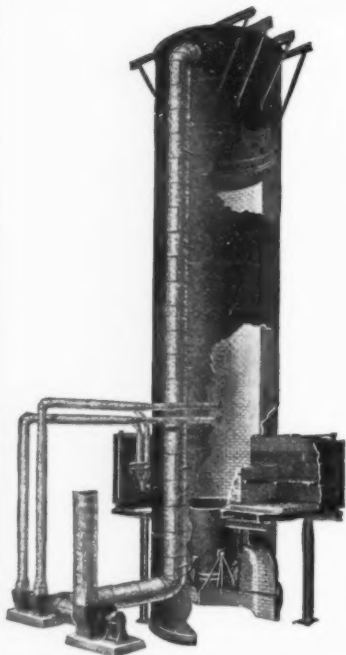
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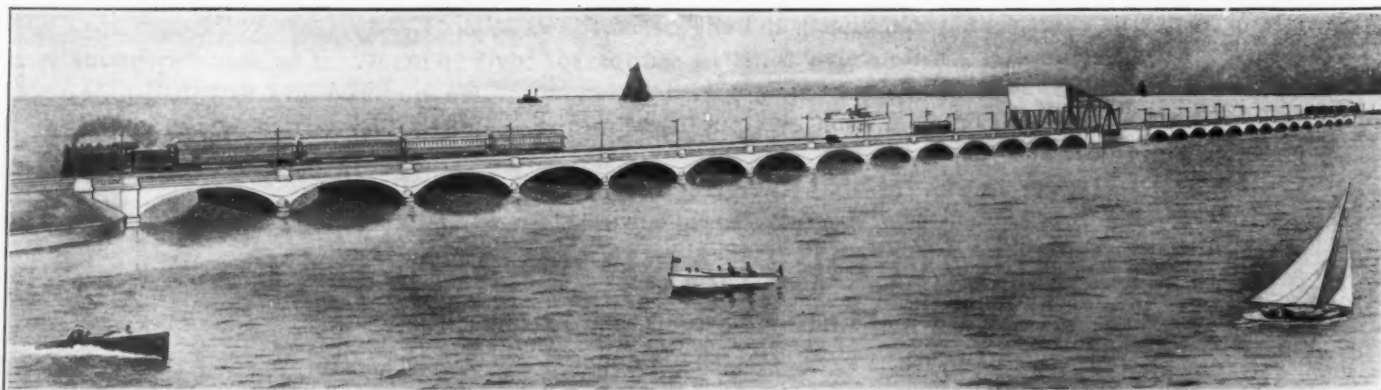
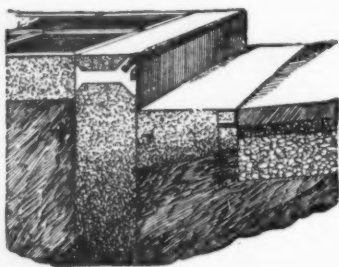
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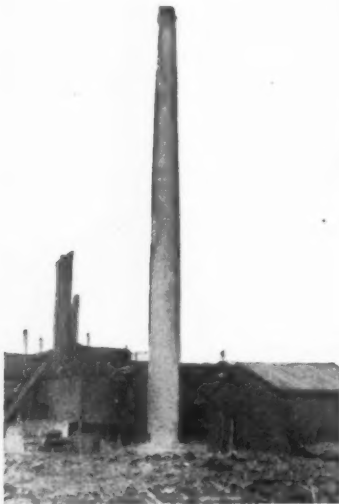
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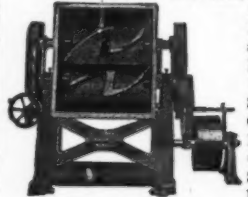
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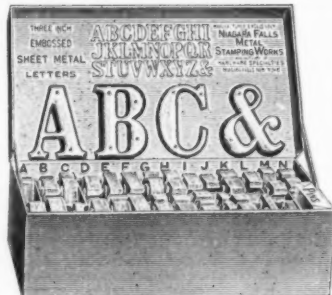
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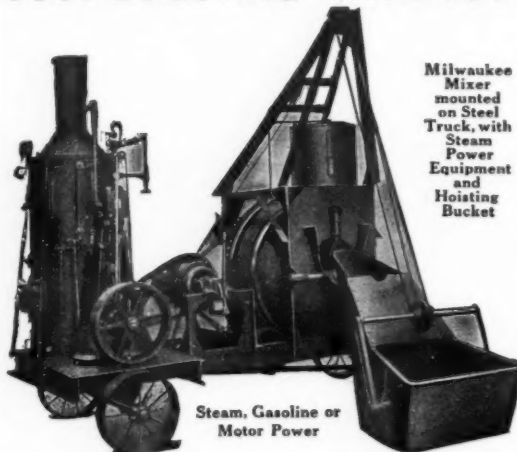
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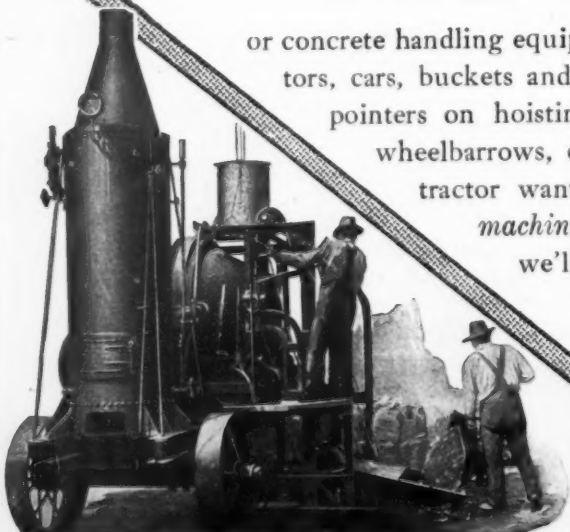
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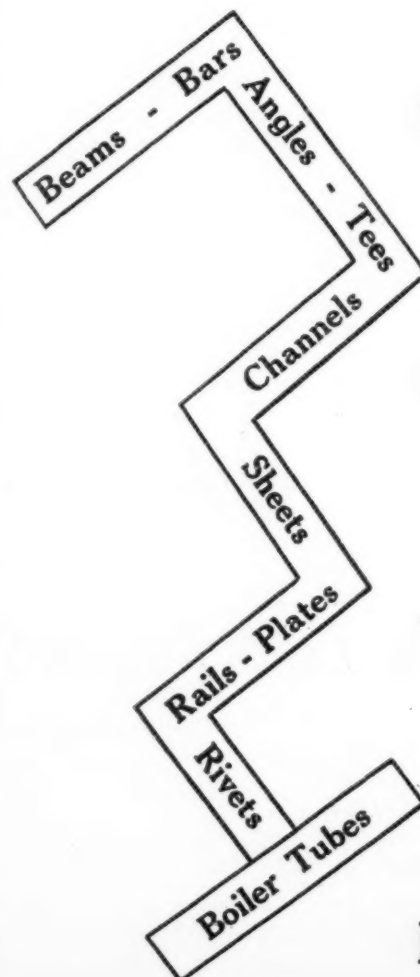
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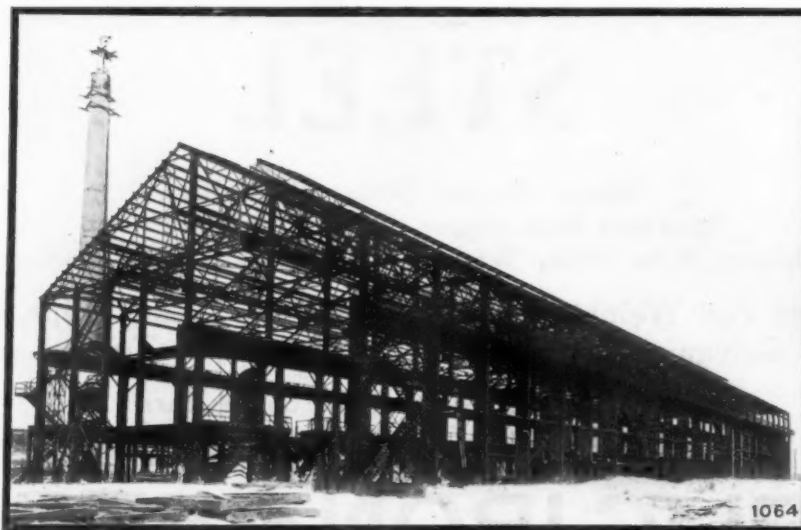
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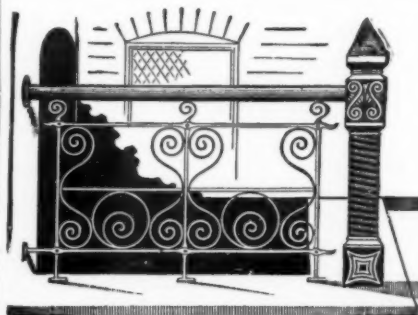
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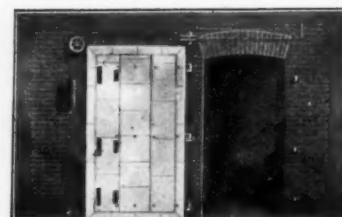
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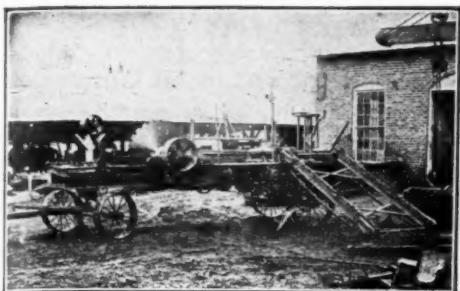
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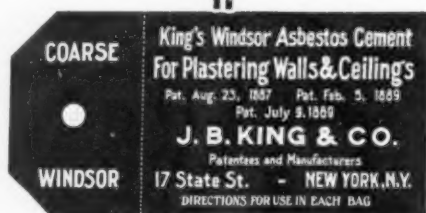
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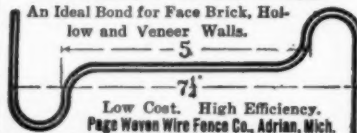
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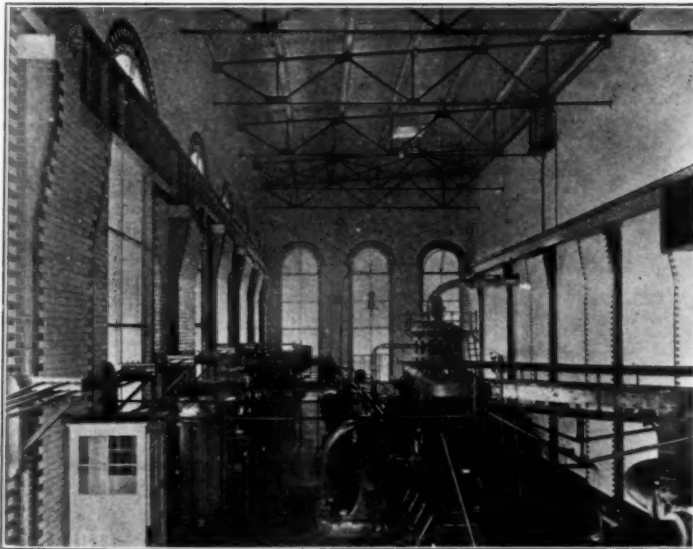
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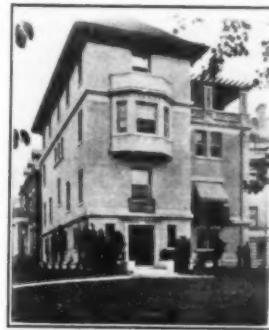
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There are so many colors and
kinds, and a number of shapes,
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contain all these, and are so well
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All Colors Prices Right

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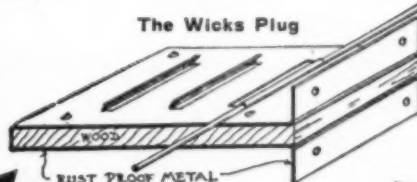
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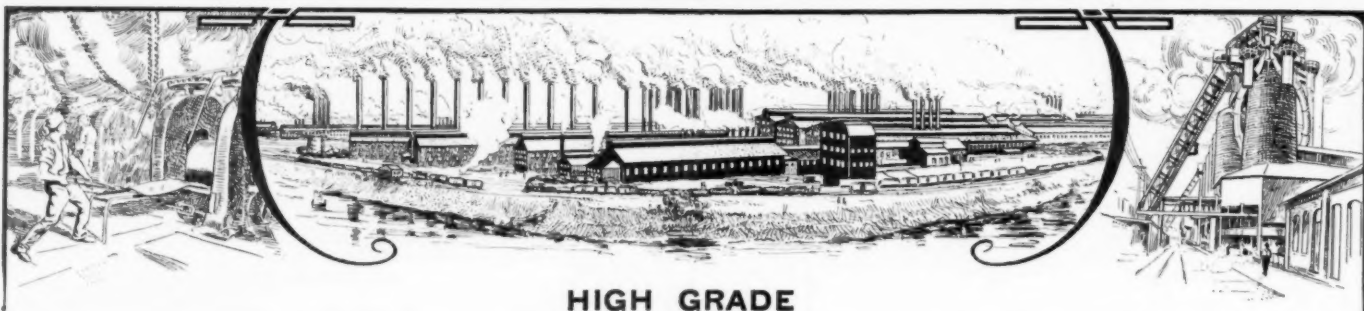
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Concrete Plug, too



Low Costs
Best Results

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This plug is brim-
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The Prepared Roofing which is Absolutely Tight.
Send for samples showing our 6-inch lap (Patented
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Our Asphalt Coating Won't Slide on the Steepest
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any number of houses, I would want nothing better than a Monitor. It requires less coal and less attention than any boiler I have ever seen."

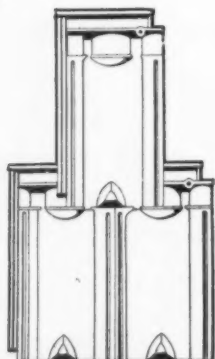
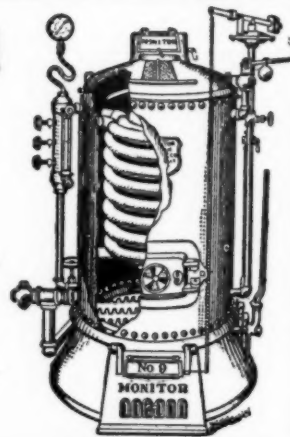
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If your work punishes the galvanizing, then ^{NEW PROCESS} sheets will be a revelation to you. Their main superiority is in the galvanizing.

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We have no intention of committing business suicide.

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Many industries in the South—Hot Springs Hotel Company, Hot Springs, Va.; Tampa Northern Railway Company, Tampa, Fla.; United States Department of Agriculture, on the power-house at Washington, D. C.—have found **NEPONSET PAROID ROOFING** particularly well adapted to the Southern climate.

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Galvanized

With Improved "Lock That Locks"
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In Roofing Slate, Slate Blackboards, Structural and Plumbers' Slate
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The Strongest and Most Economical in the Market

One-half the amount of our Mortar Colors will do the work of any other, and they are unsurpassed in strength, fineness and body.
Write for samples and quotations.

We manufacture a superior grade of Red Oxide of Iron Paint for Railroad Cars, Bridges, Barns, Fences, Etc.



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Carey's Flexible Cement Roofing

When Carey's Roofing is specified and used, roof quality, durability and satisfaction are assured. Its

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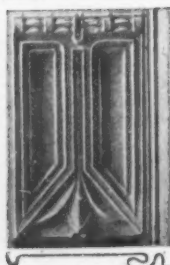
is recognized everywhere—proved by twenty-five-year tests.

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Fifty Branches Est. 1873



"CINO" Metallic Shingles

Better because of attractive appearance, ease of laying and protection.

Add immensely to looks of a building. The only "laying" is to nail them in place. When laid the shingles form practically one solid, continuous piece. The lock and flange keep rain and snow out. The roof will last as long as the house.

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Manufacturers of Genuine Bangor Roofing Slate

Also Blackboards and Structural Slate. Correspondence solicited.

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Knowing this, will you buy the covering for your roof on its "looks" alone, and not know what it is made of?

Genasco

the Trinidad-Lake-Asphalt Roofing

is waterproofed entirely with *natural* asphalt. In Trinidad Lake this asphalt has resisted blazing sun and terrible storms for hundreds of years. It has natural oils that give it lasting life in a roof despite the buffeting of rain, snow, sun, wind, heat, cold, and fire.

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The *Kant-leak Kleet* waterproofs the seams of roofing thoroughly without the use of smeary unsightly cement, avoids nail-leaks, and gives the roof an attractive appearance.

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Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

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Trinidad Lake Asphalt
Asphalt-saturated Wool Felt
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Of course, you want your roof to be as durable as your foundations. As many manufacturers of roofing proclaim their product as the most durable, the question naturally arises as to what extent their claims are truthful. No roofing can be called durable unless it outlives the building without paint or repairs, for that is the kind of durability you expect of your foundation.

That is the kind of durability you get from

Genuine Bangor Slate Roofs

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All of which statements, and many others, you can readily sift down to rock bottom facts by means of our handy roof manual, which gives you all the facts about all the roofs, largely in the makers' own words. Ten minutes reading will post you on any roofing in the market.

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RU-BER-OID ROOFING

Made for Factories, Foundries, Mills, Machine Shops, Railroad Buildings and Manufacturing Plants of all kinds where a permanent, acid and fire-resisting roof is necessary.

*Is Not Affected By
Heat, Smoke or Gases*

Contains no tar, rubber or paper, and will not rot, crack, melt or corrode. Stands any climate. Acid-resisting. Fire-resisting.

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Manufactured in attractive colors—

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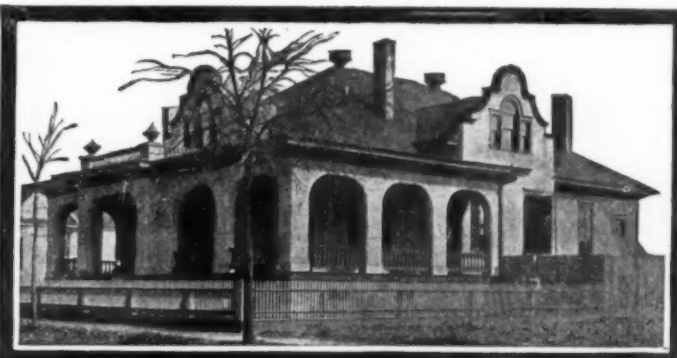
Ideal for Bungalows, Cottages, Homes, Artistic Residences, and buildings of all kinds.

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than any other form of shingle roofing**

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They're reasonable in first cost, inexpensive to put on, can be laid by any good mechanic, and harmonize with any kind of architecture.

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Simply mail attached coupon.

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Gentlemen—Please send catalog and samples at adv. in Man. Rec., Jan.
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A BUILDING
IN WHICH
BERRY BROTHERS'

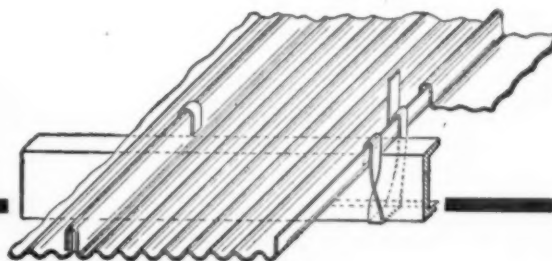
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Roof laid by Crittenden
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ANYBODY who knows roofing values would take it for granted that this building must be roofed along the lines of the Barrett Specification.

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Four Sizes
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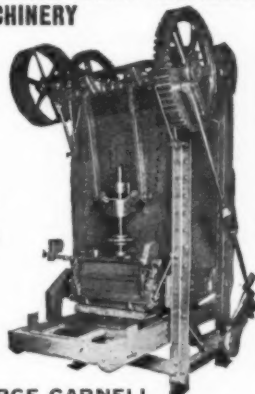
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Dealers in Brick Yard Supplies.
Boyle Ave. and Old Manchester Road,
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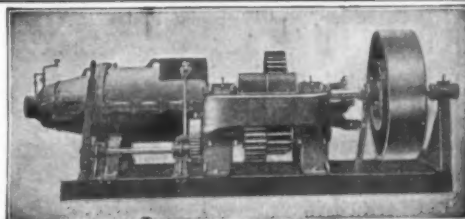
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cut nails are indispensable.*

They stand the weather test,
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We make them for all purposes
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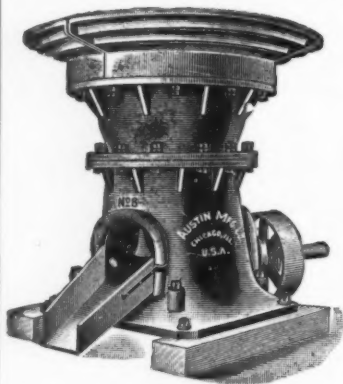
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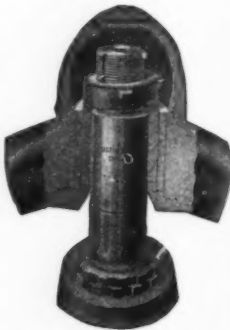
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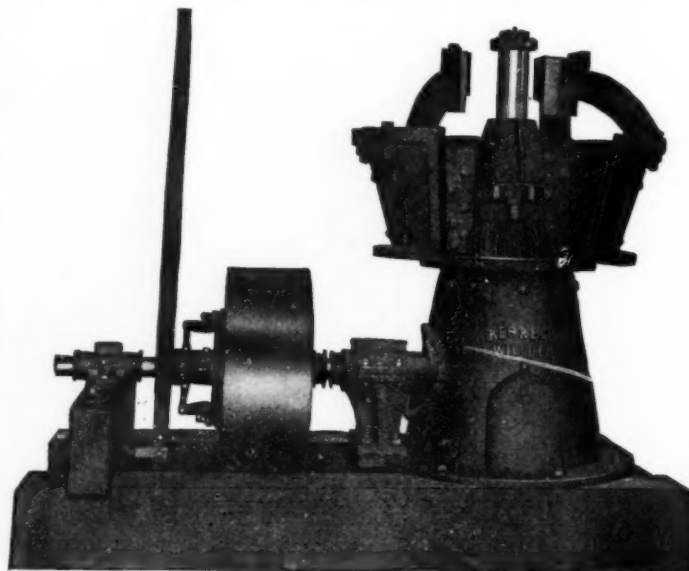
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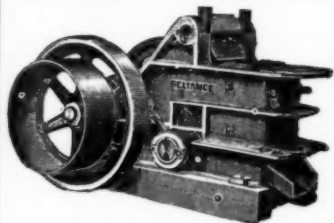
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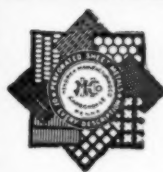
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Wishing you a continued and deserving success in your business efforts, we remain,

Yours truly,
CITY & SUBURBAN REALTY CO.,
Geo. C. Wegert, Pres.



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Baltimore, Md.

Gentlemen—After a year's test we take great pleasure in sending you a letter in reference to the steel tower, tank and observatory which your company erected for us at "Evergreen Lawn," Md.

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With best wishes for your continued success, we are,

Yours truly,

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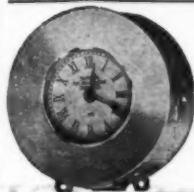
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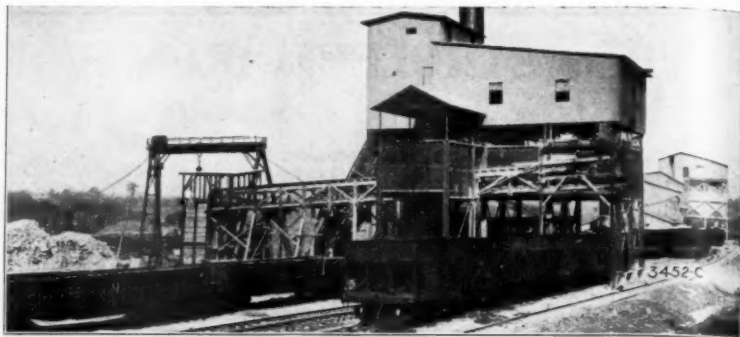
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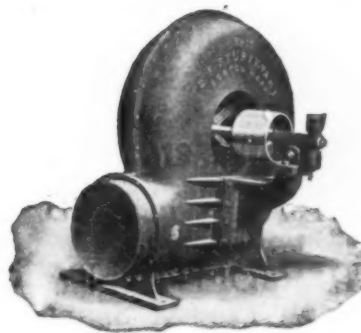
If you have not been reading them in the past it will pay you to keep in close touch with what these advertisers have to offer, as these announcements will undoubtedly often present suggestions for profitable trade openings.

See pages 96, 97, 98 in this week's issue.

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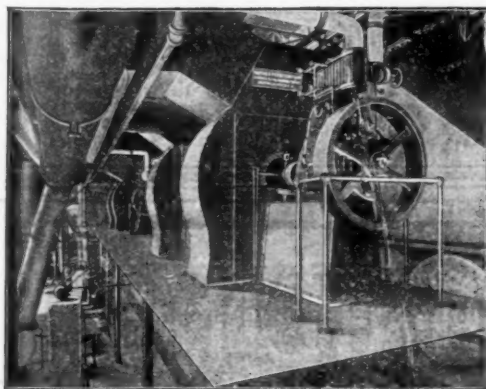
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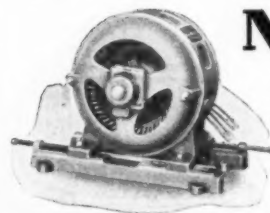
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PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.,
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BALTIMORE, JANUARY 4, 1912.

BONDED FOR PROGRESS.

Mayor John F. Cox of Lakeland, Fla.,
telegraphs to the MANUFACTURERS REC-
ORD under date of December 30:

Seventy-five thousand dollars for sewers,
\$60,000 for brick streets and \$15,000 for public
buildings were the amount of bonds voted
today by a big majority. H. D. Bassett, C.
G. Memminger and G. B. Murrell were
elected bond trustees.

Lakeland has a population of 3000 or
3500. It is one of the most attractive
little cities of Florida. Its voting \$150,-
000 of bonds for public improvements
is proof of its faith in itself and a guar-
antee of its healthy growth. Its spirit
is that which is animating hundreds of
cities and towns all over the South.

LOUISIANA SULPHUR.

The importance of the Louisiana sul-
phur-mining industry is strongly indi-
cated in some figures of the Census
Bureau covering the period between
1902 and 1909. Prior to 1902 the pro-
duction of sulphur was combined with
that of pyrite in the census figures.
Since 1902 the imports of sulphur, prin-
cipally from Sicily, have declined from
171,380 tons, valued at \$3,357,650, to
30,589 tons, valued at \$549,632 in 1909,
the importations having fallen as low
as 21,136 tons, in 1908. The big drop
occurred in 1905, when the 84,339 tons
imported were 45,193 tons less than in
1904. Meanwhile, production in this
country has increased from practically
nothing in 1902 to 127,292 tons in 1904,
valued at \$2,663,760, and to 239,312
tons, valued at \$4,432,066, in 1909, the
record year having been 1908, with a
production of 360,444 tons, valued at
\$6,668,215. The change is due to the
bringing into production of the vast de-
posits in Calcasieu parish, Louisiana,

both giving the American market its
supply and sending sulphur to other
parts of the world. The exports in 1909
amounted to 6553 tons more than the
imports.

SHEEP IN THE SOUTH.

On April 1, 1911, there were in the
United States 39,761,000 sheep of shear-
ing age. Of the total number, 6,068,000,
or something more than 15 per cent.,
were in the South, including Missouri
and Oklahoma. The wool produced
during the year, according to the report
of the National Association of Wool
Manufacturers, was, including 41,000,-
000 pounds of pulled wool, 318,547,000
pounds of washed and unwashed.
Scoured wool, not including the pulled,
yielded 109,966,195 pounds, valued at
\$52,451,377, of which the South pro-
duced 16,759,555 pounds, valued at \$7,-
407,631. The number of sheep of shear-
ing age, the scoured wool produced and
its value by individual States are
shown in the following table:

Wool Production in 1911.

States.	Sheep of shearing age.	Scoured pounds.	Value.
Alabama.....	120,000	234,000	\$93,600
Arkansas.....	100,000	240,000	96,000
Florida.....	100,000	195,000	78,000
Georgia.....	175,000	392,000	156,800
Kentucky.....	800,000	2,356,000	1,013,080
Louisiana.....	145,000	316,535	126,614
Maryland.....	128,000	408,320	171,494
Mississippi.....	160,000	371,200	148,480
Missouri.....	1,150,000	4,286,500	1,663,935
North Carolina..	150,000	326,250	133,763
Oklahoma.....	60,000	117,000	52,650
South Carolina..	30,000	65,250	26,100
Tennessee.....	500,000	1,297,500	544,350
Texas.....	1,400,000	3,118,500	1,621,620
Virginia.....	450,000	1,296,000	583,200
West Virginia...	600,000	1,759,500	897,345
Total.....	6,068,000	16,759,555	\$7,407,631
United States....	39,761,000	109,966,195	\$52,451,377

Twelve States had more than 1,000,-
000 sheep of shearing age. Only two
of them were in the South—Missouri
and Texas—and the combined number
in those two States, 2,550,000 was not
equal the number in New Mexico alone,
while the 6,068,000 in the whole South
was 4,782,000 less than the total in Mon-
tana, Wyoming and Idaho. Ohio had
more than four times as many as Ken-
tucky and nearly five times as many
as West Virginia.

The three mountain States of the
West mentioned produced 28,878,750
pounds of scoured wool, nearly 27 per
cent. of the total, and 12,119,195 pounds
more than the whole South, and more
than half of the Southern production
came from Missouri and Texas.

These few facts thus revealed by the
figures ought to stir the South to a bet-
tering of the situation as far as it is
concerned. There is no natural reason
why many more sheep should not be
raised in quite a large area there.
Aside from their value for food and as
wool producers, sheep count for much
as natural builders up of the soil. In
recent years attempts have been made
to extend sheep-raising, but in many
localities these have been balked by
the worthless cur. Until a general law

against dogs in the country can be en-
forced, sheep-raising will have its dis-
advantages, but it ought not to require
much argument to persuade lawmakers
that one sheep is worth more than a
dozen curs, and that sheep-owners are
of more value to the State than owners
of dogs that have to wander for their
food.

THE SOUTH'S OPTIMISTIC OUT- LOOK UPON THE COMING YEAR.

The South entered the new year with
a number of well-defined plans, empha-
sizing an optimism that promises no-
table material progress in the coming
twelve months. In some respects the
year 1911 had its drawbacks for the
South, just as was the case in the coun-
try at large. Uncertainty as to the fu-
ture, generated in the turmoil of na-
tional politics, was a hobble upon the
business of established industries and
a deterrent of new enterprises. Move-
ments for the merging of the interests
of a number of cotton-mill companies
into two or three large groups, with es-
pecial reference to economies in mar-
keting the goods, reflected the dullness
in the textile trade consequent upon
the failure of the price of products to
increase in proportion to the increase
in the price of the raw material and
of labor. The record-breaking cotton
crop, resulting from overplanting and
an especially favorable season meant,
of course, a decided drop in the price
of raw cotton per pound. There was
dullness, too, in the iron industry, and
to some extent in the coal trade, still
depressed by the business depression
of the winter of 1907-08.

But against these manifestations,
none of which is of more than tempo-
rary character, were a number of ac-
complishments and projects showing
the full confidence that the South has
in its future and the share of others
in that confidence. For example, while
the value of the cotton crop, including
seed, fell off about \$175,000,000 from
that of 1910, the 1911 value of the
South's corn crop was near \$695,000,000,
and with its wheat, oat and hay crop
represented an aggregate value of quite
\$900,000,000. The real significance in
this grain situation, however, lies in
the fact that in the ten years between
1901 and 1911 the corn crop of the South
more than doubled, increasing at the
rate of 113.7 per cent., while the crop
in the rest of the country increased
only at the rate of 67.2 per cent., and
that this expansion in corn production
is but a part of the increasing tendency
to diversification in agriculture, which
will go a long way toward solving the
problem of prices for the cotton crop.

Bearing directly upon this agricul-
tural development is the widespread
practical interest of capitalists in other
parts of the country and in foreign
lands in Southern land properties. In
half a dozen States this interest has
taken shape in the acquisition by in-
dividuals or corporations of vast tracts

of land, with activities already under-
way, either in handling the tracts as
a whole or in dividing them into small
farms for settlers from other parts of
the country. One of the most impor-
tant of these plans was the organiza-
tion under the same auspices of two
companies, each with a capital stock
of \$1,500,000, to operate 32,000 acres of
cotton land in Washington and Bolivar
counties, Mississippi, with the guaran-
teeing of the bonds of the companies by
an organization of fine cotton spinners
in Manchester, England. In the Yazoo
Delta, also, a Belgian has secured op-
tions on 28,000 acres of land, while New
England cotton spinners are investigat-
ing with a view to purchase large tracts
in Mississippi. There were large de-
velopments undertaken in Texas, Lou-
isiana and Florida, those in the last
two States being connected with lumber-
ing operations or with the reclamation
of wet lands through drainage.

This policy of reclamation has a firm
hold upon other States, including Vir-
ginia, the two Carolinas, Georgia, Mis-
souri and Arkansas, while irrigation,
rapidly being accomplished in Texas,
where during the year English capital
to the extent of \$6,000,000 entered the
field, has extended into Arkansas, par-
ticularly in transforming the upland
prairies into productive rice fields, and
a strong sentiment for it is developing
in Oklahoma.

Hardly a month passed in 1911 with-
out the announcement of two or more
plans for handling Southern timber re-
sources, and toward the close of the
year was organized a company to de-
velop in western North Carolina 250,000
acres of timber land, estimated to cut
1,250,000,000 feet of hemlock and 1,100,-
000,000 feet of poplar, cherry and other
hardwoods. Lumbermen have awak-
ened to the opportunities for farming
in the cut-over pine lands, and center-
ing in Mississippi, but reaching into
Alabama, Georgia, Louisiana and
Texas, a decided impetus was given to
the placing of such lands upon the
market in a way satisfactory both to
buyers and to sellers.

Mineral developments, especially in
coal, petroleum and phosphate, have
kept well up to the mark, and their
future is suggested in such widely-
separated enterprises as the establish-
ment of glass works within touch of
the Caddo natural gas fields in Lou-
isiana, the organization of a \$7,250,000
corporation to take over phosphate de-
posits in Florida and fertilizer plants
in that State and in South Carolina,
and to construct additional plants in
North Carolina and Georgia; the pur-
chase by Pennsylvanians of 175,000
acres of coal land in eastern Kentucky
in the belief that in that section is the
coming field of by-product coking coal
of the highest quality; the develop-
ment of natural gas in Fayette county,
Alabama, and the awarding of the con-
tract for construction of 1000 build-
ings in the vicinity of Jenkins, Ky., by
a large coal corporation as a part of

its development of 100,000 acres of coal land there.

Progress was made in developing the water-powers in southwest Virginia, Tennessee, the Carolinas, Georgia and Alabama, and connected therewith plans were forwarded for the utilization of electric power derived in extensive interurban transportation lines in a number of industries, including the derivation of nitric acid from the atmosphere to be used in the manufacture of fertilizers, while another plan, representing an investment of from \$12,000,000 to \$15,000,000, looks to the developing of 500,000 horse-power for the derivation of aluminum from bauxite. The utilization of Southern resources in industries connected with the science of chemistry was given a decided spur in the arrangement for a plant to cost \$100,000 in Louisiana to manufacture daily 500 gallons of ethyl alcohol and other products from sawdust and other refuse of the lumber industry.

A new iron company was organized to build a furnace near Lynchburg, Va., to have a capacity of 125 tons, with an nodulizing plant to recover iron ore in the waste clunders from pyrites used in the manufacture of sulphuric acid. The purchase by the Woodward Company of Alabama of the Birmingham Iron & Coal Co. was one of the most important moves in the South since the acquisition by the United States Steel Corporation of the Tennessee Coal, Iron & Railroad Co., and it was akin in its bearing upon Alabama development to the merging of the Alabama Consolidated Coal & Iron Co. and the Southern Iron & Steel Co., practically effected in December.

Voting by Houston and Harris county, Texas, of \$1,250,000 of bonds to match an appropriation of equal amount by the Federal Government for the completion of the ship channel to a minimum depth of 25 feet, and of \$500,000 of bonds for a concrete viaduct across the channel, connecting the north and south sides of the city, the appropriation by Congress of more than \$1,000,000 for the Orange-Beaumont-Port Arthur deep waterway, the celebration at Morgan City, La., of the opening between that city and the Gulf of a ship channel 200 feet wide and 20 feet deep, an important element in the development that is to come with the completion of the interoceanic canal between the Mississippi and the Rio Grande Rivers, the completion of the Southwest Pass improvement in the Mississippi and progress upon the inland waterway links along the Atlantic Coast were phases of the additions to the South's equipment for water transportation, while 1800 miles were added to the length of Southern railroads.

Other manifestations of Southern progress were the passage by Congress of the bill for the forest reserve in the Appalachians looking to an ultimate appropriation of \$8,000,000 and the beginning of the purchase of lands for the reserve, plans for additions to Southern cotton mills representing an investment of \$6,000,000, beginning of operations of two or three Portland cement plants, devoting of bond issues in blocks of hundreds of thousands of dollars for improved highways, great activity in the establishment of cold-storage plants and ice factories and a steady rising of the skyline in buildings in Southern cities.

Many pages of the MANUFACTURERS RECORD would be required to give the merest details of the industrial and other developmental enterprises that

have been undertaken in the South in the past twelve months, and which have been sketched here. But enough has been cited, perhaps, to indicate the optimistic outlook of the South upon the coming year.

ANOTHER TRUNK LINE INTO THE SOUTH.

It will not be long now ere the South has another trunk line connection between the largest of its seaports cities—Baltimore—and that great interior center of commerce and industry, Chicago. On the eve of Christmas the builders of the Western Maryland Railway's extension from Cumberland to Connellsville connected the two ends of its big tunnel through the Alleghanies, and the contractors' forces are now busy clearing out the bore preparatory to laying track. According to expectations, the rails will be down on the entire length of the improvement some time next month. By springtime the line is to be in use. Excepting for about 25 miles out of its 87 miles' length, it parallels the Baltimore & Ohio road. It is built in first-class manner, with easy grades and alignment, and will be an admirable freight railroad, although it is expected to also handle considerable passenger traffic that is developing in a gratifying way, according to the last annual report of the Western Maryland.

Ample evidence of how important the new division will be is found in the issue of \$10,000,000 of short-term notes, which the company has just announced, and of which \$8,000,000 were immediately sold, the proceeds to be used for increased facilities, especially to meet the requirements of traffic that will come to the line by way of the extension. Enlarged terminals, additional trackage and more cars and engines are among the things which the new money will provide. Work is already in progress upon the enlargement of the freight terminals in Baltimore, both at Hillen and Port Covington stations. Modern terminals are also to be built at Cumberland, besides other betterments at various points on the main line. In fact, the company has entered upon a period of expenditure and improvement that will probably be indefinitely protracted, as the Connellsville extension, by connection with the Pittsburgh & Lake Erie Railway—a New York Central road—carries the Western Maryland right into the Pittsburgh district, the expanding traffic output of which is one of the wonders of the railroad world.

The success of the Western Maryland in thus attaining a position to share in the profits coming out of this great manufacturing region is something to marvel at, remembering that the big railroad systems already established there at Pittsburgh view their foothold with jealous eyes, and can calculate with accuracy the share of each in a year's traffic. It really did require one of the big roads—the New York Central—to see great advantages in an alliance with the Western Maryland that could give it a short route to the Atlantic sea coast, in order that the extension might be financed. Once the traffic agreement was made between the two companies, capitalists responded immediately, and construction has progressed from its beginning with great rapidity. Had it not been for the encountering of a quicksand in the heart of the mountain where the tunnel went through, and which made the construction there necessarily slow, the line

would have been completed before the end of 1911.

As the New York Central is placed with respect to Pittsburgh, its route from there to New York, which is its own seaport, is too long for adequate competition with either the Pennsylvania or the Baltimore & Ohio roads. But over the Western Maryland it obtains a route from Pittsburgh to New York 31 miles shorter than the Baltimore & Ohio, yet it appears that Baltimore, by reason of its proximity, will probably develop into the principal port of the new road. Furthermore, the New York Central line between Pittsburgh and Chicago is direct, and will be easily operated in connection with the Western Maryland with fast through trains. These advantages make the new trunk route especially valuable.

Great as would be the value at any time of this combination of railroads to forge another link across a large part of the continent, it seems particularly so now when other lines are forming alliances farther west also to reach Southern ports, and, besides, new roads are building from the Gulf of Mexico northward to meet either existing lines out of important centers or new ones that are projected. All these things are so many links in the chain of evidence to prove that the South is steadily and surely coming into its own.

THE RIGHT TO WORK FOR A LIVING.

Facts about the lockout of textile operatives in the Lancashire district of England are worth emphasizing in this day of a philosophy, constantly expanding in dangerous directions, that would sacrifice, without the individual's free and willing consent, his natural and proper rights to the supposed good of the somewhat intangible idea named as "society," "the people" or "the mass." The facts are plain enough. Two or three weavers refused to join a labor union of their fellow-operatives. Their employers refused the demand of the union that they be discharged from the mill. The union called a strike, and the lockout followed, extending to a number of mills and affecting directly a hundred and fifty and more thousand weavers thus barred from work, and indirectly many other thousands of spinners, put on short time because of the reduced call for yarns. Whether refusal to join a union was made the occasion for a strike planned to influence the price of raw cotton, a theory justified, perhaps, by the preliminaries of more than one labor or other disturbance in this country in recent years, or whether it originated in the mere desire for a holiday on the part of the strikers, its settlement should be made on no other basis than a clear recognition of the principles that a man has the right to work for his living on his own terms, and that an employer has the right to select whom he chooses on his own terms. Both of those principles have been obscured of late. And society, the people or the mass, the supposed beneficiary, has been the sufferer.

Among the natural and proper rights of the individual is the right to organize, whether he is a farmer, a mechanic, a banker, a manufacturer, a day laborer, or in any other occupation, for the purpose of advancing the proper interests of himself and his associates in the organization through the economies that come from co-operation, and through the moral effect of numbers behind any project. But the effect is moral only when the project is a correct

one, and the right to organize is natural and proper only as long as the association involved is purely voluntary on the part of the individual. As soon as the power of the mass of numbers or the mass of money or of any other force short of law is brought to bear upon an individual to coerce him into a course of action that has not appealed to his inclination or judgment a blow is struck against society, the people or the mass, against the integrity of the State. It begets an outlawry that is the more pernicious because it has the support, unthinking for the most part, of thousands of men and women who otherwise are respectable and good citizens, but who, in standing by their organization, become confused as to the verities. Instead of developing social consciousness, it encourages class consciousness, and the case of industry results in the extremes of employees striking to compel employers to become involuntary recruiting agencies for the union among men unwilling to become slaves in entering the union, and of employers resorting to a lockout to make effective the policy of an open shop. When the extreme action extends beyond the single establishment and takes the form of the so-called "sympathetic" strike or lockout, involving employers and employees who have no immediate interest in the matter in dispute, the rights of thousands of individuals are assailed. Clashing of classes is disastrous to the masses not merely from the material standpoint, but as weakening the safeguards of individual life and happiness without which materialities are as nought.

The latent evil in practically all organization not clearly defined by judicial law is that members of the organization come to place the organization above other considerations, and incline to use it in a way detrimental to the proper rights of the individual, even the individual within it. The great majority of organizations have executive officers in whom is reposed the confidence of the mass of members. Executive initiative is seldom resisted and executive action seldom questioned. The plight into which the American Federation of Labor has been brought, for instance, in the McNamara case through dependence of the mass upon the judgment and discretion of executives is a striking and timely illustration of the general tendency of large organization. Few men can be entrusted with great power not regulated by statute law without almost unconsciously inclining to add to their power until they command instead of executing. Indeed, the past decade is full of notorious instances of the abuse of power in government ostensibly of law and on the books in that way by ambitions of irresponsible individuals. The probability of such abuse in the case of a voluntary organization is much stronger.

Hence there is absolutely necessity for all right-minded individuals to resist at every turn the demand that the individual must yield his personality to the organization of any kind. Organization is all well and good in its place. The great tasks of the world cannot be accomplished and the human race cannot be advanced without organization. But in all organization the element of human selfishness must be kept down to its lowest possible degree. Organization consciousness must not be allowed to overshadow social consciousness, and the grouping of that consciousness into a place where it may benefit must not be hampered by a

policy that undertakes to develop it by stressing the idea of class or organization consciousness and is filling the statute books of the States and the nation with class legislation, embodying the more or less one-sided theories of divers organizations, many of them at odds with one another, an idea rooted in the imbecility of an optimism that looks for everything coming out all right in the wash, no matter what is put into the wash.

Law for the benefit of any particular class is bad law, unless it be at the same time for the good of the greatest number of citizens. Theoretically a man might have right to dam a stream flowing through his property for the purpose of obtaining a water supply or a source of power. But that right cannot be exercised if the damming of the water will injure the property of other men higher up the stream. This country especially, under the sway of public sentiment, or, rather, of a number of brands of public sentiment that has mistaken mob rule under the form of law for intelligent democracy, has been authorizing the building of too many dams by this or that organization in disregard of the fundamental conception of justice that would be relied on in the case of an ordinary question of dam-building. To that curse has been added the greater one of dam-building by organizations of one kind and another making membership in them a species of slavery for many unwilling ones, and adding mightily to the influences which more and more drown expression of sane and healthy public opinion in the howls of an organized mob.

THAT LOBBY FOR DOLLAR DIPLOMACY.

What is the game of the international lobby working the United States just at present in the interest of the arbitration treaties? That there is a lobby, a large one and a pretty desperate one, is a fact growing upon minds that, strong for the principle of arbitration and stern against resort to war for the settlement of any dispute, are determined against peace that brings dishonor, and against the prostitution of the principle of arbitration for the furtherance of the aims of selfish interests. The lack of the sense of humor or its violent suppression on the part of leading participants in the "peace dinner" in New York contributed to the gaiety of nations on the eve of the new year was hardly needed to convince the observant student that the proposed arbitration treaties are loaded at both ends. In support of them there have been more or less prominent too many individuals who have fame as international lobbyists, men who are ardent for dollar diplomacy, the diplomacy that means dollars for themselves, men who could tell very interesting tales of the diplomacy that has brought about wars of the past twenty years in order that weaker nations might be made the victims of dollar diplomacy, men who hope that, under the guise of arbitration, the bold pilferings from a helpless people may after many days be financed with profit to themselves.

More than one of the eminent advocates of these treaties ought to be ashamed to be seen in the company of ordinarily decent men. But they know better than most other people that there is no safer hold upon a position in respectable society and no surer method of advancing their selfish designs than by taking the lead in humanitarian or

ethical movements, and, in having that lead, gaining the chance to divert the sentiment of disinterested thousands into a mighty force to carry out their special purposes. They know, too, how easy a matter it is to enlist the use of names of hundreds of eminently respectable men for any plausibly good cause, the eminence of such respectability being largely due to the frequency and invariability of the use of their names in support of plausibility. They fully comprehend the force of the fact that, in the matter of world-wide peace, thousands of men welcome any movement, however imperfect. So, there is developed a grand hurrah for the return of the Boxer indemnity fund among kind-hearted men and women who never question the propriety of such fund having been demanded, allowed, and do not realize that there may be a rake-off for some folks in the diplomacy precedent and succeeding to the return. While the band plays "Hands Across the Sea," the tender-hearted people of the United States are urged to give blind support to another turn in the game of English statesmanship that has been writing the diplomacy of this country from the days of Poncefote, and which has tied our hands across the sea. Again we are asked to burn our hands by pulling the chestnuts from the fire.

Arbitration is a thing much to be desired. But the arbitration that is to be brought about by the proposed arbitration treaties should be disinfected before the American people are committed to it by the Senate.

ON SOUTHERN IMMIGRATION.

Two letters of illuminating interest in connection with the live question of immigration to the South reached the MANUFACTURERS RECORD in the same mail. James H. Patten of Washington, D. C., referring to recent articles in our columns in regard to the kind of immigrants the South wants, writes:

You take most commendable ground in the matter. One very serious mistake has been made in the history of the South's development, and every precaution should be taken to prevent history repeating itself. At one time our forefathers seemed to have thought that the only way to secure an adequate supply of labor was the importation of slaves. Their importation brought results and consequences little dreamed of. Possibly the demand for labor to grow cotton was solved thereby for a time and the cotton industry was rendered more profitable, but every dollar proved blood money one hundred fold. * * * Not only did the mistake saddle upon the majority of the whites an economic evil, but it was followed in time by even worse racial, social and political evils. For, after all, it is our institutions and evils and their successful perpetuation that make us economically, industrially and commercially great.

Mr. Willis S. Thompson of Hattiesburg, who is interested in the settlement of farm lands in Mississippi, writes:

I notice you advocate bringing only good people and eliminating certain foreign elements. The colonization movements in South Mississippi are conforming to this idea. They are bringing the people principally from the Middle West, and most of them have been farm renters or selling their high-priced land and buying cheaper farms in the South. Some who came South a few years ago and located in Tennessee report that their farms have increased four or five times the original purchase price. They are selling and buying here, anticipating that this experience will repeat itself, and I do not think that they will be disappointed.

These letters suggest two points to be kept to the front in all movements for immigration to the South. One is that American ideals must not be sacrificed in efforts for material advance-

ment, and the other is that the selected individual settler with his family buying his own land in determination to make the most of it is of more value than a hundred brought indiscriminately and colonized in such a way as to remain an alien influence. Farmers from the North and West are, of course, the most desirable settlers for the South, but farmers from other lands proposing to farm in the South are also desirable, provided they intend to look to their neighbors for guidance and not continue subject to dictation from any kind of foreign source. In the hordes of undesirable who have been flooding into the country in the past ten years, there may have been many who left farming localities in their native lands, but they came to the United States with no idea of becoming farmers, or even living in the country. That is why the congestion of foreigners in such centers as New York has become such a menace to the institutions and ideals of America.

SOME NEW-YEAR GREETINGS.

Among many New-Year greetings received by the MANUFACTURERS RECORD were letters and telegrams of good wishes from the North and West, as well as from the South. Mr. Geo. F. Randolph, vice-president of the Baltimore & Ohio Railroad, in a letter of good wishes, said: "I congratulate you on the part that your wonderful paper is playing in the development of West Virginia and other Southern States, and sincerely wish you all possible success the coming year."

J. E. Ingraham, vice-president of the East Coast Line of Florida, in a wire expressed the "hope that with your help we shall be able to introduce a new era of prosperity into Florida, of which the East Coast will have its share."

J. A. Farrell, president of the United States Steel Corporation, in a New-Year letter, said:

"We join you in the hope that the coming year will prove a prosperous one, and that the whole country may benefit from the greatly improved conditions which restored confidence and renewed operations will produce."

F. H. McMaster, Insurance Commissioner of South Carolina, wrote:

"May 1912 bring handsome returns to the MANUFACTURERS RECORD and increase its influence throughout the country."

D. M. Hoke, president of the Hoke Hill Real Estate & Investment Co., wiring from Greenville, S. C., said:

"Accept our best wishes for a bright, happy and prosperous new year. May you live to see many more, each being more prosperous, as it has been in the South, thanks to your good work through your paper. The Greater South will stand in years to come as a monument to your untiring efforts in its upbuilding."

R. B. Naylor, secretary of the Board of Trade, Wheeling, W. Va., wrote:

"On behalf of the Wheeling Board of Trade I desire to extend to you and your good journal the compliments of the season and best wishes for the new year. I trust that 1912 may prove a greater year than ever before in your work of Southern upbuilding."

THE COTTON MOVEMENT.

In his report for December 29 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 120 days of the present season was 9,416,328 bales, an increase over the same period last year of 1,187,985 bales. The net exports were 5,066,091 bales, an increase of 797,520 bales. The takings were by Northern spinners, 1,090,698 bales, a decrease of 165,864 bales; by Southern

spinners, 1,037,022 bales, an increase of 73,720 bales.

SOME SOUTHERN CROPS.

A trucker in Southern Alabama gathered last season from three acres of land 1392 hampers of cucumbers, which cost him, including the hampers, \$277. For them he received when they were sold in St. Louis \$1101.25, so that his net profit was \$834.25, or \$278 an acre.

J. P. Taylor of Henderson, N. C., obtained last summer from 16 acres of land near Orange, Va., more than 1500 pounds of white burley tobacco, which brought him \$2800. The crop cost him not more than \$1000, and his net profit was more than \$1800 an acre.

Paul D. Fulwood, near Tifton, Ga., picked last year from four acres of land eight bales of cotton, from 12 acres of new ground seven bales and from four other acres 7½ bales. Ten of his acres yielded him 370 bushels of corn, one acre \$300 worth of green sugar-cane and seven acres 280 bushels of oats. After cutting the oats five acres of this field were planted in sweet potatoes, which yielded 500 bushels of potatoes. Mr. Fulwood raised also about \$700 worth of cabbage, onions, peas, etc., and his whole area under cultivation was but 50 acres.

From apple trees planted in November, 1906, E. E. Thornton of Houston, Miss., gathered last year an average of nearly one bushel to the tree.

In East Tennessee \$500 per acre have been received for tomatoes, \$500 per acre for lettuce, \$300 per acre for cabbage, \$200 per acre for peppers and from \$100 to \$200 per acre for strawberries and cantaloupes.

A German farmer in Prince Edward county, Virginia, has during the past 10 years increased the yield of his land from 10 bushels to 80 bushels of corn per acre, and he also averages 1200 pounds of tobacco and three tons of hay to the acre.

A net profit of \$300 an acre was received last year for strawberries grown near Brooklyn, Fla.

J. R. Powell, near Mobile, Ala., is receiving more than \$1100 an acre from a small grove of orange trees.

These are a few of the statements showing the agricultural opportunities in agriculture in the Southeastern States made in the *Southern Field*, the organ of the land and industrial department of the Southern Railway.

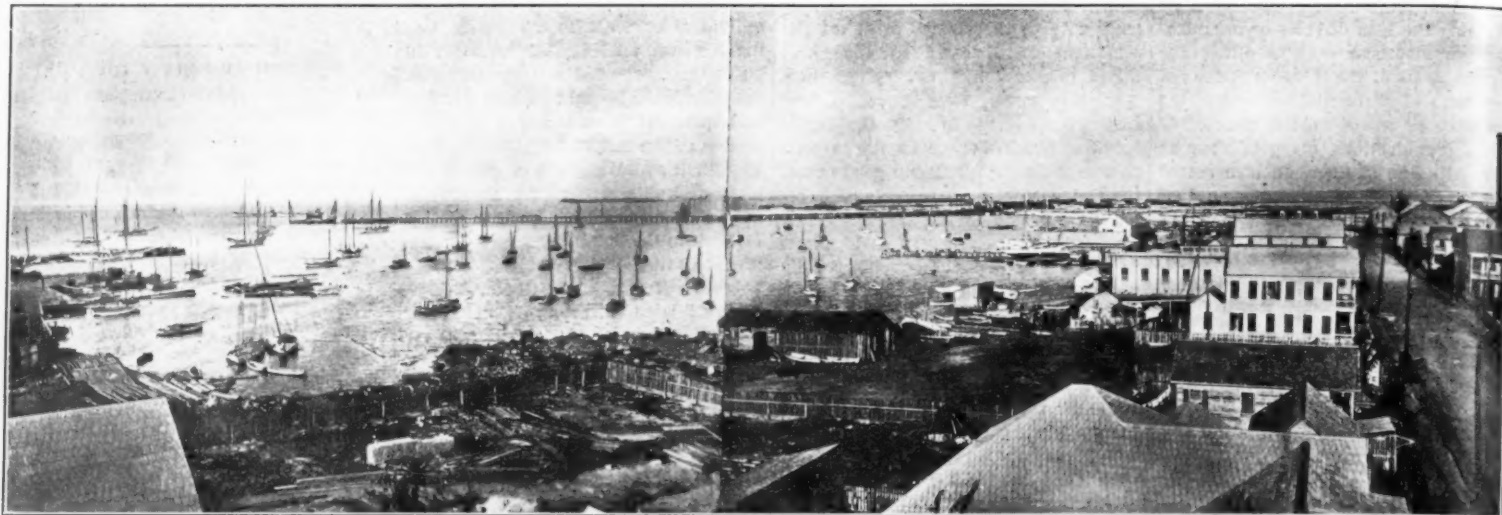
TO KEEP INFORMED ABOUT THE SOUTH.

Merry Steel Truck Co., Memphis, Tenn., manufacturer of trucks, cars, handling appliances and systems, in a letter to the MANUFACTURERS RECORD says:

"We have an exceedingly high opinion of your magazine, and it has been of unusual value to us in putting us in touch with new plants, etc., and we would not think of missing an issue. The main value of the information which we derive from its columns lies in the correctness and authenticity of the information furnished."

To Transmit Electricity to Atlanta.

The Central Georgia Transmission Co. of Macon has filed an application with the Georgia Railroad Commission for permission to issue \$2,000,000 common stock and \$2,500,000 bonds. This is in connection with the company's plan to construct transmission lines and build necessary substations from Griffin northward to Atlanta, for furnishing electricity in the latter city. The electricity will be obtained from the Jackson water-power development of the Central Georgia Power Co. of Macon, W. J. Massee being president of both companies.



DOCKS BEING CONSTRUCTED AT KEY WEST TERMINUS OF THE FLORIDA EAST COAST.

At this point ships can begin discharging or taking on cargo within an hour of leaving the roadstead. These docks will carry trains to ship side, half a mile out over the water. The street shown at right opens onto a wide expanse of "made ground." It was formerly a harbor for small boats, such as shown on the left. It was filled up with sand and gravel pumped in from the harbor being deepened, and will be utilized for the terminal tracks. Many acres of ground were thus built up.

"Over-Sea Railroad" Completed to Key West.

Florida East Coast Railway.
St. Augustine, Fla., Dec. 30, 1911.
Editor Manufacturers Record:

The last shovelful of concrete was put in place at 2.04 A. M. the 24th inst. This leaves no doubt but that we will commence running trains through to Key West on the 22d prox.

With the completion of the work on the extension we will have 17.2 miles of concrete work, all of it concrete piers; some of it with concrete arches; the remainder steel spans.

Very truly yours,

H. M. FLAGLER,
Chairman of the Board.

[Special Dispatch to Manufacturers Record.]

Key West, Fla., Jan. 3, 1912.

All concrete work necessary for through trains into Key West on the Florida East Coast Railroad is finished, and official announcement has been made that the first train will come through on the morning of January 22. There is absolutely nothing to prevent the establishment of a regular schedule on that date, which marks the opening of our "Over-Sea" railroad celebration. President Taft cannot be present, but Mr. Flagler, the Rivers and Harbors, Naval and Military committees of Congress and representatives of a number of foreign powers will come. The celebration will last until February 3. A big crowd is expected, and visitors should write for accommodations before they come, as the city will be taxed to provide for all.

MARCY B. DARNALL.

[Special Cor. Manufacturers Record.]

Key West, Fla., December 30.

When the United States Government, armed with the taxing power over 90,000,000 people, decided to dig the Panama Canal and thus bring into closer relation the commerce of the Pacific and the commerce of the Atlantic, it remained for one man, well past the scripturally allotted age and with power over no purse but his own, to outline the plan and consummate the work that will bring to the people of this country the fullest enjoyment of the fruits of that mighty public enterprise by furnishing the connecting link of swiftest possible communication between the eastern end of the canal and the great centers of population of the United States.

Hon. Elihu Root is reported to have

said, when Secretary of State, that the extension of the Florida East Coast road to Key West would be, in its broad influence upon the commerce of the country, second in importance only to the building of the canal itself, and it takes but little study of the situation of this city with respect to the canal and the most thickly populated portions of the United States to find proof to sustain that assertion.

Economy of time is the one thing towards which all business minds are bent in these modern days. Railroads spend millions of dollars to straighten tracks, reduce grades and cut out-curve to the end that their trains may make quicker time between given points. Men use the electric flash, with or without wire, in place of the quickest mails, to forward messages and letters to their correspondents. Millions of pounds of merchandise are sent each year by express at a much higher cost than by freight because of the more rapid transit and quicker delivery. Many trains run each day between New York and Chicago, and all go with the speed of the wind, but special trains going each way each day carry many passengers at a greatly increased rate of fare, because by traveling on them they can save a few hours' time.

A railroad from Key West will mean that travelers from Colon, from the South and Central American countries, from Cuba and Porto Rico will have the choice of going the 1505 miles from Key West to New York by steamer or by rail, the time consumed in going by the latter route being 24 hours less than that required for the former. To Chicago, Cleveland, Cincinnati, St. Louis, Louisville, Pittsburg and the many other points to which trains must needs be taken from New York the saving in time by the all-rail route will be even greater. As with passenger traffic, so with the mails, the express and those classes of freight the nature of which demands the earliest possible delivery—the "over-sea" railroad from Key West will furnish the quickest and most acceptable route. Can anyone doubt that this road is destined to be a great carrier of both passenger and freight?

As the Key West extension complements the Panama Canal in the matter of commercial utility, so it matches it as a great piece of constructive work and sur-

passes it in daring, in that it is the enterprise of one man, financed with his private fortune, whereas the other is the undertaking of 90,000,000 people, financed from the public purse of the richest nation in the world. To a nation the appropriations from whose treasury total a billion dollars a year the expenditure of a hundred million dollars more or less, distributed over a period of years, makes little difference, but the construction from the private resources of one man of 150 miles of the most costly railroad ever built is an undertaking of stupendous significance even in this day of almost incalculable fortunes. Yet in no other way could the Key West extension have been built. It required a combination of the vision of a prophet, the faith of a crusader, the courage of his convictions and the wealth of a modern Croesus, all combined in one person, who had also the constructive business ability, the certain grasp of details so necessary to the accomplishment of all great undertakings. That these things all meet and combine in the individuality of Henry M. Flagler the consummation of this mighty achievement will bear witness, according to one great railroad builder, when the pyramids of Egypt have crumbled to dust.

To properly grasp the magnitude of this undertaking it may be necessary for some readers of this story to go to the map and study the geography of the situation. It will be noted that Cards Sound, at the south end of Biscayne Bay, is joined to Barnes Sound, at the north end of the Bay of Florida, by a very narrow strip of water. A short bridge over that strip carries the railroad from the mainland to Key Largo, and from that point the way lies over a succession of keys for 107 miles to Key West. These keys are nothing but islands (taking their name from the Spanish cay, meaning island), and all of them are small, Key West, last of them, being a little less than a mile wide and something under four miles in length, containing 1975 acres. Some of the keys are but a few hundred feet apart, with intervening shallow water, and here the construction was comparatively simple, but between others the distance is much greater, and in one place reaches a total of seven miles. In places in these longer reaches of water a largely increased depth adds greatly to the problem of construction.

The track over the water expanses is laid on bridges and arched viaducts of the same varying lengths. The arched viaducts are of concrete, the piers standing

80 feet apart and the solid arches stepping from one to the other in unbroken succession as far, in places, as the eye can reach. The bridges are of the steel girder and cantilever types. The girders are 80 feet in length and stand eight feet high on concrete piers. The cantilever bridges are of the same character as are used in the construction of bridges on other roads where long spans are necessary, and here they vary in length up to 243 feet. They are supported also by concrete piers. Here and there it has been necessary to let in a draw so that ships may pass unimpeded from ocean to bay and from bay to ocean.

The longest of these crossings is from Knights Key south, where it is seven miles from abutment to abutment. This is a combination of girder and arch, with a great draw across Moser Channel, down toward the south end. Another long bridge is that from Long Key north, two and one-quarter miles in length. At Bahia Honda the bridge, a succession of cantilever spans, is a mile long. In passing over some of these crossings from key to key the traveler looks vainly from the car window on either side for a sight of land, only to see the sky line meet the water at the boundary of his vision.

The one thing favorable to the construction of the great bridges and arches in an enduring manner is the geological formation of the keys and the sea bottom between. It is almost entirely solid rock, the limestone that analyzes about 92 per cent. pure lime. The broad bases of the concrete piers weld themselves naturally to this rock foundation, and every pier thus becomes a part of a solid whole, and the oneness extends over the entire line. It makes the railroad as substantial, therefore, as if Nature herself had thrown up these peaks of solid rock as a part of her general scheme of island building.

In addition to the immense structures necessary to carry the track out over the water, it was also necessary to throw up fills for mile after mile of the road both on the keys and on the southern end of the mainland to lift the steel above the reach of the tidewater that overflows the entire body of land for long distances. For many miles on the mainland, indeed, the roadbed was thrown up by a gigantic dredge working on either side, supported by barges that floated on the water of the canals thus created. These canals are still there, one on each side of the road, with sufficient depth to float craft of considerable draft. A peculiar feature is that the water in the canal on the west side



LONG KEY VIADUCT OF CONCRETE, 2.7 MILES LONG.

of the road is fresh, while that on the east side is salt. The grade thrown up in this way is a combination of earth and stone in its soft formative state, which, exposed to the air, rapidly hardens to a condition that makes it an ideal roadbed.

Nor were the handicaps prescribed by nature the only discouragements met and overcome by the genius and determination of the great constructor of this prodigious enterprise. The men with whom he had long been associated in business, those in connection with whom he had already achieved a success that is the marvel of the commercial world, men who had learned to regard him as the man with the clearest vision, the strongest grasp of business possibilities, the greatest master of detail in the commercial world—these men, in whose judgment he naturally had great confidence and to whose counsel he had often listened with respect, all looked upon this venture as one impossible of successful termination, and his determination to carry it through as evidence that his natural force was abating, his clear judgment becoming cloudy; not one of them that would have risked a dollar of his money in the enterprise. As for others, they regarded the entire matter as one of the foibles of advanced age, the dream of a visionary bent upon riding his hobby to his own destruction.

There is a story of a man who stubbornly refused to believe there was such a thing as a railroad in successful operation. Finally he was persuaded to go and see for himself. He arrived at the station while the engineer was oiling up the bearings of the locomotive, and hearing the steam and seeing what he thought were efforts to start the train, he kept saying:

"They'll never start her."

Finally the engineer mounted to the cab, pulled the proper lever, and away went the train, gathering speed as it went. The stubborn old fellow looked after the train until it disappeared from view, and then, turning to the friends who had accompanied him, said:

"Well, by gum, they'll never stop her."

So when Mr. Flagler announced his determination to build his railroad to Key West many engineers who had been more or less over the route, and many others who had seen none of it, said

"He'll never build it."

Then when the road was built for a number of miles from key to key, and they saw locomotives hauling the people and the traffic over its track, they said:

"Well, by gum, he'll never hold it."

Even so late as one day last month an engineer declared to me that it was impossible that the road into this city could be maintained. He pointed out the fact that miles of it had been swept away by the force of the waves, lashed to fury by the winds that came from the tropics. He was right as far as what he said about what had already occurred went, but he was wrong in the conclusions drawn from those occurrences. The winds and waves, instead of demonstrating the impossibility of maintaining the road, demonstrated its entire feasibility and indestructibility.

When the first of the key-to-key work was done many fills were made that extended considerable distances into the open water. The first hurricane that blew up from the tropics swept them away like sand, leaving the road a twisted and broken lot of rails and ties, with no semblance of the great highway it had been a few hours before. But, patient, determined and undismayed at the millions of dollars' loss which the storm had entailed, Mr. Flagler set his forces to work to repair the gaps and go on with the extension. Only a change was made in the style of construction, and instead of trying to throw up fills that would hold in the face of an angry sea, concrete and steel bridges and viaducts were depended upon to defy the strength of the combined and angry elements. The consequence was that when the terrible hurricanes of 1909 and 1910 came, and when the wind, blowing at the rate of 120 miles an hour, caught up in its embrace and hurled against the piers and arches and abutments the millions of tons of water, the piers and arches and abutments stood firm and unshaken, and when the winds had passed over and the waters had receded they stood white and smiling in the glow of the southern sun.

Then the builders knew they had found the method of conquering wind and wave and that their work would stand secure.

At this end of the line extensive preparations have been made for terminals. A large body of ground, a quarter section in extent, at a guess, has been "made" by pumping into what was once shallow water the sand and gravel removed from the bottom of the harbor in the work of deepening and extending it for the accommodation of large numbers of vessels. This "made" ground will be utilized for the many terminal tracks, and ample room is provided for a sufficiency of them to

care for immense amounts of freight in many cars.

From these terminal docks are being built out into the harbor, carrying double tracks, so that cars may be run out to shipside for loading and unloading. The docks will be something like 2000 feet long, giving room for loading and unloading a number of ships at one time. Over beyond the beginning of these docks are others lying alongshore, where vessels of lighter draft can come in and discharge and take in cargo.

Supplementing the railroad and the line of steamships which now run between here and Havana for the transfer of freight and passengers Mr. Flagler will build immense ferryboats capable of picking up and carrying across the straits entire loaded trains, so that freight to and from Cuba can be carried in unbroken carload lots. When that is done manufactures will be loaded in cars at the industrial centers of the United States and carried to Cuba without unloading, and there the cars will be reloaded with the products of the island to be carried to their destination in the United States without change. This will mean an immense saving in handling heavy freights, and will unquestionably be the means of bringing a great deal of patronage to the road. The idea of ferrying whole trains across a piece of water of such known and regular roughness as that which lies between Key West and Cuba is a fitting climax to this whole daring scheme of railway construction.

As for the enterprise as a financial proposition, it will take time to fully demonstrate its value in the minds of on-lookers, for it is not given to many to peer into the commercial future and behold with Mr. Flagler's clearness of vision what it will bring forth. The entire east coast below St. Augustine was a hopeless financial proposition when Mr. Flagler took hold of the railroad and announced his intention to extend it, and it took a very optimistic person indeed to maintain confidence in its success financially. There was nothing produced in the section in which it was projected, nothing to be hauled out, and next to no population to create a demand for anything to be hauled in. Most people failed to figure that the building of the road would cause the influx of a population that would create freight to be hauled out and cause a demand for freight to be hauled in. That, however, is the way Mr. Flagler figured, and the outcome has more than justified

his figures, for the growth of business along the line of the road has been so great that it has rendered double tracking imperative, and that will come as soon as undertakings that now have the right of way are finished.

The same eye that foresaw the wilderness that was the east coast of Florida grow into the succession of garden spots that is the east coast of Florida also foresaw a great international business offering itself to a railroad that should be ready at Key West to meet it on its journey from the south. It foresaw also the hundreds of thousands of passengers journeying hurriedly from south to north and from north to south, impatient of delay, unwilling to travel a mile on shipboard that might be traveled by train. It foresaw the thousands of tons of mails coming and going—mails that must proceed always by the quickest route and ready always to pay for the privilege. And back of that foreseeing eye lay the same cool judgment, the same calm faith, that backed the former vision and helped to visualize it so that even the blindest might see and believe, ready to back the latter by building the extension that shall make the dream a verity. And so Key West gets the road.

There can be no doubt of the fact that this will be a favorite route for travelers to take when bent on pleasure—a favorite haunt, this whole east coast, for winter tourists. Mr. Flagler has built a line of palatial hotels extending from St. Augustine to Miami—pausing at the latter place to fling one across into the Bahamas, to find lodgment at Nassau—and there is no question that he will build one here. He has already made announcement of that intention, indeed; his eye too keenly sees strategic points to have overlooked this as a location for a great tourist caravansary. During a conversation between a number of gentlemen at Miami the other day the statement was made that 200,000 tourists visit that city during a season. The assertion was questioned, and I took occasion to make inquiry in official quarters, where I received the information that the number last season was about 75,000. Many other thousands stop at the various points farther north—from St. Augustine to Palm Beach—without coming to Miami. Thousands upon thousands both of these latter and of those who come as far as Miami will hereafter come to Key West, drawn by the charm of the "over-sea" railroad, whose

very pseudonym has a sound of magnet-like attraction.

When it is considered that within 60 hours the dwellers among Maine's snow-clad hills can reach and pass through all the surpassing loveliness of the east coast of Florida to this farthest southern reach of their country's long arm; that from New York city travelers can come, in palace cars from which they need not step between starting point and destination, in 48 hours; when we remember that from the frosty breath that blows from the Great Lakes the balmy winter climate of this tropic clime can be reached in little

that bloom all the year in the open; orange groves heavy with their golden fruit; stately palms that lift their proud heads on every hand; palmettoes and ferns and every kind of tropical product growing by the side of the railroad as the trains go thundering through. And as the traveler is carried over the water from key to key he will turn from reveling in the constantly-changing beauties of sea and earth and sky to a realization of the fact that nowhere else do the works of man seem to so blend with and become a part of the works of the Almighty as along this road, for its construction fits so well into the

plishment of man's genius to which every citizen should come and pay the tribute of his presence and interest.

Later, when the boat swung away from the dock and took her southward course, I watched the deep blue of the outer way as it shaded to a turquoise tint where the water runs shallow over the reefs, and that edged in turn by the white waves as they lap the shores of the distant keys, and I thought here is the picture that makes this journey worth while.

And then as the golden sun, swinging low above the shimmering waters of the Gulf, against the background of an azure

that the wreck to which he referred in our issue of November 9 "did not occur on the Lehigh Valley Railroad, but on the Pennsylvania Railroad, to a train made up of coaches from the Delaware, Lackawanna & Western Railroad."

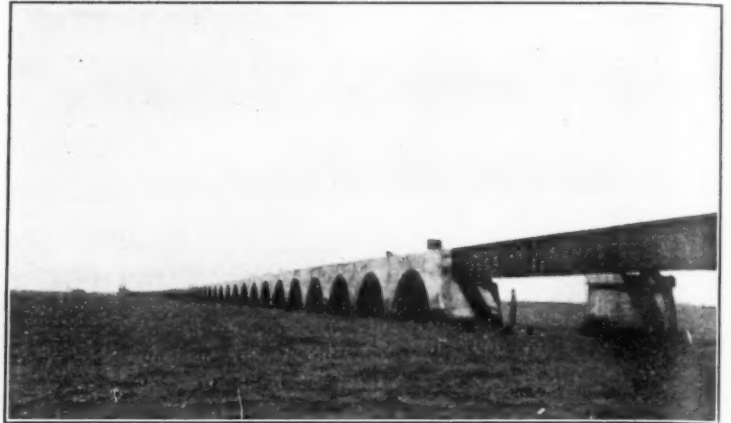
Wood Block Paving.

A. B. Cooke, city engineer of Joplin, Mo., writes the MANUFACTURERS RECORD in regard to wood block paving in that city: "We are laying about 15,000 yards of this work, and the street will be accepted in 10 days. The portions of this

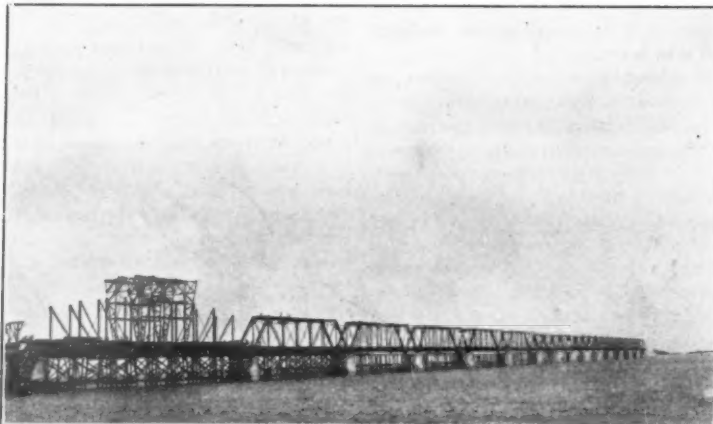
TYPES OF CONSTRUCTION FOR THE "OVER-SEA RAILROAD."



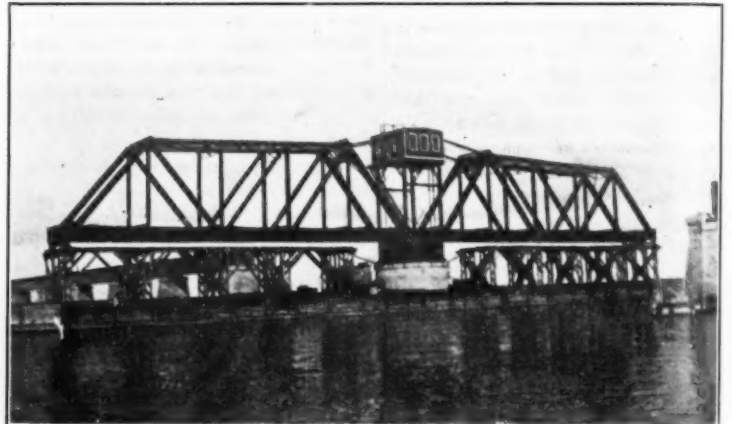
THE 243-FOOT SPAN IN THE BAHIA-HONDA CANTILEVER BRIDGE, THE LONGEST ON THE EXTENSION.



WHERE ARCHES AND GIRDER BRIDGE JOIN, SHOWING TWO TYPES OF CONSTRUCTION.



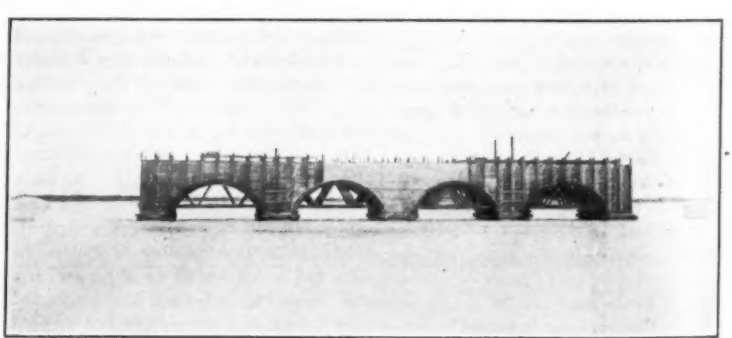
A LONG LINE OF BRIDGE OF THE CANTILEVER TYPE.



THE BIG STEEL DRAW AT MOSER CHANNEL. THE PICTURE SHOWS IT OPEN.



ABUTMENT AND PIER, BAHIA-HONDA BRIDGE. (Photographed before completion.)



PARTLY-COMPLETED SECTION BOCA CHICA VIADUCT. (Photographed before completion.)

more than two days' time—when we remember these things there seems little reason to doubt the verity of the vision in which unnumbered thousands were seen journeying by way of the "over-sea" railroad to this southern outpost of the great republic.

The journey to Florida repays itself in the tropic luxuriance of tree and flower that everywhere greets the eye. The journey through Florida is its own reward, for from north to south the traveler revels in an ever-increasing luxuriance—flowers

general scheme of island and water that each seems a part of one great plan of creation.

The boat upon which I came to Key West yesterweek was late in getting away from Knights Key, and as I sat upon the upper deck, lazily ruminant in the soft December air, and contemplated the great bridge reaching out over the long stretch of water, the girds at the end nearest merging into the concrete arches farther to the south, and those melting finally into the horizon, I thought here is an accom-

sky all shot with red and yellow, seemed to pause for a time before sinking into his bed of crimson clouds to light up the waters with a radiance beyond compare, I thought that surely in all the universe God's matchless hand had laid for man's delight no other scene so wondrous fair.

GEO. BYRNE.

A Correction.

Mr. A. W. Eckberg of the Dahlstrom Metallic Door Co. of Jamestown, N. Y., writes to the MANUFACTURERS RECORD

street now open to traffic are very satisfactory in every way, affording a handsome appearance, a noiseless roadway, and we have every reason to believe will possess wearing qualities in keeping with the traffic of the street. This pavement replaced a vitrified-brick pavement, the old brick wearing surface being removed and the roadway scarified to the old concrete sub-base. The sub-base was repaired and surfaced, a new sand cushion built on this and creosoted wood blocks with a sand filler laid."

Oklahoma Mineral Industries in 1911.

By L. C. SNIDER, Oklahoma Geological Survey.

The general condition of the mineral industries in Oklahoma was not quite so good during 1911 as during 1910. Several factors contributed to produce this result, chief of which were the general business conditions, and the drouth which affected the entire Southwest. The falling off was most noticeable in those products immediately connected with the building trades. The other industries, oil and gas, coal, and lead and zinc, which are the most important, show little or no decrease. The conditions at present do not warrant the prophecy of a phenomenal increase of mineral production in 1912, but there is no reason why any of the industries should be less active than 1911, and substantial gains are to be expected in many of them. A brief account of the different mineral industries is given below.

The petroleum production for 1911, as estimated from reports of pipe line runs, will be very nearly the same as that for 1910, with the probabilities in favor of it being slightly larger. The higher prices paid for oil will cause a considerable increase in the value of the output. The principal features of the year were the discovery of the Perryman pool near Tulsa, the opening of the Osage lands to development and the discovery of oil in paying quantities near Ponca City. This extended the limits of the oil field much farther to the west than had been considered probable. The older portions of the field are beginning to show a marked decrease of production, but the opening up of new territory more than compensates for this, so it seems probable that the production will increase for some years to come.

The general conditions are the same for natural gas as for petroleum. The older fields are being rapidly exhausted, but new fields are constantly being developed to take their places. The bringing in of a strong gas well at Poteau, near the Arkansas line, in 1910, and of two good wells at Spiro in 1911 extend the field far to the southeast, and as the intervening territory is very promising, great developments may be expected in this region. The California field, south of Coffeyville, Kans., is also a very promising new field. Gas occurs in commercial quantities as far west as Blackwell, west of the middle of the State, so that only a small portion of the possible gas field has yet been prospected. Gas in smaller quantity has been found near Ardmore, in the south part of the State, and around the Wichita Mountains.

For the first few years after the discovery of the oil and gas in the State there was very little demand for the gas, and many of the wells were shut in and others were allowed to escape in the hope of developing a flow of oil. Incalculable amounts of valuable fuel were allowed to go to waste in this way. With the development of the manufacturing industries of the State and the annulment of the State law prohibiting the piping of gas from the State the demand became very heavy and the drain on the field very great. Immense quantities were piped to Kansas City and other towns in Kansas, and to Joplin and neighboring towns in Missouri. This gas comes from the Bartlesville, Collinsville, Copan, Hogshooter and Delaware fields. Oklahoma City is supplied with gas from the field near Sapulpa.

The production of the State for 1909 was 35,223,834,000 cubic feet, valued at \$1,743,963. Figures for 1910 are not available, but they will show a marked increase over those of 1909. A conserva-

tive estimate for the value of the production for 1911 is \$3,000,000. The production for the pipe lines in the northern portion of the field alone is in the neighborhood of 186,000,000 cubic feet per day. This does not include the gas used in drilling operations nor the great portion of the domestic consumption.

The coal fields of Oklahoma have shown little new development since 1907, the year of maximum production. The principal causes for this condition are the strong competition of gas and fuel oil in the adjacent territory and the mining and labor conditions, which render the cost of production higher than it is in Colorado and New Mexico, thus giving the coal from latter States an advantage in the markets. There is little hope of either of these adverse factors being remedied in the immediate future, and while the production should not become less than it is, there is no great increase to be expected. The production for 1911 (figures based on partial returns and on estimates of the Southwestern Coal Operators' Association) will be between 2,750,000 tons and 3,000,000 tons. The prices have been lower than in 1910, so that the value will probably not exceed \$5,750,000.

Lead and zinc have been produced in two areas, the extreme north-eastern corner of the State, which is part of the Joplin district, and in the Arbuckle Mountains, near Davis, about 75 miles south of the center of the State. There are three camps in the northeastern field, the Peoria, Quapaw and Miami, of which the last named is the principal producer. The nature of the ores, their occurrence and the mining conditions are the same as in the well-known Joplin region. The principal development in this field the past year was the opening of new mines in the north end of the Miami camp, which show large bodies of exceptionally rich ore, and the proving of the presence of a large body of deep ore beneath the greater portion of the camp.

In the Davis field one mill has been built and two or three others are in prospect. Several carloads of zinc carbonate have been shipped in the past, and the first carload of zinc sulphide (jack) concentrates was shipped in October, 1911.

The production for 1911 will be less than that for 1910 on account of the low prices offered for zinc concentrates in the early part of the year. The production for the last few months of the year was greater than for the same portion of 1910, and if the price for zinc concentrates is satisfactory the production for 1912 will be the greatest yet made from the State. The estimated production for 1911 is 2240 tons of lead concentrates, valued at \$149,500, and 9500 tons of zinc concentrates, valued at \$276,000—a total value of \$425,500.

The production and value of the structural materials will show a considerable decrease in 1911. This is due principally to the drouth, which caused a considerable suspension of building operations in the State.

Although there are vast amounts of raw material in Oklahoma for the production of various clay products, combined with great advantages in the way of fuel supply, brick is the only product of any importance. A small amount of drain tile is made, but the value is so small that it is included with that of the brick.

The production of brick in Oklahoma in 1910 was 145,707,000, valued at \$920,921.

In 1911 some of the plants did not operate, and others, especially those in the western part of the State, operated only a portion of the time. For 1911 partial returns indicate a decrease of production estimated at 10 per cent., and a slightly greater decrease in value, due to the lower prices prevailing. This would make the production approximately 131,137,000 brick, with a value of approximately \$800,000. The outlook for 1912 cannot be said to be especially encouraging.

Granite, limestone, marble and sandstone are produced in considerable quantities, and the available supply of all of them are inexhaustible. The granite comes from the Wichita Mountains, and is gray, pink, red and black in color. The marble is found in the extreme eastern portion, and is gray and pink. Limestone occurs in the Arbuckle and Wichita Mountains, and in the northeastern and the southern parts of the State. Sandstone is distributed generally over the State.

The production of limestone and granite decreased in 1911, but the amount cannot be definitely stated. Resumed production of marble at Marble City and the opening of a large limestone quarry at Bromide will probably keep the total production up to about \$500,000.

Gypsum is produced in the western counties of the State. Ten mills are in operation, and these seem to be more than sufficient to supply the demand, as there has been an overproduction for some years, and very few of the mills have been run to their capacity. The supply of rock gypsum is inexhaustible.

The production of the gypsum products, including land plaster, Portland cement, paint, etc., and calcined plaster in 1910 was about 120,000 tons, and the value was approximately \$450,000. For 1911 a decrease of production and of value of at least 25 per cent. is indicated, making the production 90,000 tons and the value \$337,500.

Asphalt occurs in Oklahoma in pure form as impsomite or grahamite, and as impregnations of sandstone, limestone and shale. The pure forms are used in the preparation of asphaltic paints and varnishes, waterproofing and insulating, etc. The asphaltic sandstone and limestone are used in paving.

The value of the asphaltic rock in Oklahoma in 1910 was \$65,244. The value for 1911 will be very nearly the same, or slightly larger. The prospects are for an increased production in 1912.

Three Portland cement mills have been built in Oklahoma, with a combined capacity of 7000 barrels. Only two of these mills report production for 1911, and on this account no estimate of the production is given. Trade conditions, however, have not been so satisfactory as in 1910, and the production and value are considerably less.

The sand and gravel utilized in Oklahoma comes in a large measure from the streams, especially in the northeastern part of the State, and those from around the Wichita and Arbuckle Mountains. There are immense deposits of pure white sand in the Arbuckle Mountains which are probably available for glass sand, but no use has as yet been made of it. The value of the production in 1911 will be nearly \$150,000.

The estimated value of the various mineral resources of the State for 1911 is summarized below:

Petroleum.....	\$20,000,000
Gas.....	3,000,000
Coal.....	5,750,000
Lead and zinc.....	425,500
Brick.....	800,000
Stone.....	500,000
Gypsum.....	337,000
Asphalt.....	65,000
Sand and gravel.....	150,000

Total..... \$31,270,000
(Excluding Portland cement.)

It should be borne in mind that these figures are only estimates, as insufficient data has been received to give a basis for a definite conclusion. It is believed that these estimates are conservative, and that the total value of production will be greater rather than less than the estimated total.

IN A FERTILE REGION.

Bastrop's Contiguity to Valuable Mineral Deposits.

[Special Cor. Manufacturers Record.]

Bastrop, Tex., December 29.

Bastrop, the county-seat of Bastrop county, is one of the oldest towns in the State. It is on the banks of the Colorado river, about 30 miles southeast of Austin, on the main line of the Missouri, Kansas & Texas Railway, and has a population of about 3000. The Colorado River Valley land is among the most fertile in the State, producing a diversity of crops without the use of fertilizer. This land bounds the town on the north and south, while on the east the town is surrounded by heavily-timbered pine hills, and on the west by rolling and comparatively level and light-timbered land. The soils are varied and are adapted to the profitable production of cotton, corn, oats, alfalfa, fruit, vegetables, berries and truck of all kinds. Irrigation, while never attempted on a large scale, is practical and inexpensive, though not necessary, as there is sufficient and abundant rainfall, well distributed throughout the year, to insure good crops. The great variety of soils, mineral resources, the splendid opportunities offered for raising hogs, sheep, goats and poultry, cheap fuel, abundant water supply, and the refining influence and general surroundings, offer the best inducements to homeseekers and manufacturing enterprises, as well as capital investment in development of mineral resources.

Lignite of a high grade is mined in abundance near town, two such mines within five miles of Bastrop being unable to supply the demand. The vein underlies a large portion of the county at a depth of from about 60 to 100 feet and of a thickness of from three to eight feet. It is adjacent to the railway right of way and can be easily marketed. As shown by the United States Geological Survey and reports of other experts, large undeveloped oil fields lie near the town. Other minerals abound throughout the county. The climate is delightful almost the entire year. It is equable and mild, practically that of New Orleans, with much less humidity. Being subject to the moderating influences of the Gulf breeze, it is pleasant and healthful, lacking the extreme heat of South Texas and the intense cold of North Texas.

The average annual temperature is 67.4 degrees F., as shown by the United States Government report. The annual mean rainfall is 33 inches, fairly well distributed during the year. The elevation is from 400 to 600 feet above sea level. Sickness is reported less here than any other town of like size in Texas on account of the excellent surface drainage, and pine forests east of the town being conducive to good health. The principal crops are cotton and corn; oats, wheat, millet, alfalfa, Johnson grass, native hay, sorghum, melons, potatoes, peanuts, cowpeas, berries, vegetables and fruit are grown profitably. The soil is strong and fertilizer is not used. Tobacco can be raised in paying quantities. Labor is cheap, and crops can be harvested readily, the principal labor being negroes and Mexicans.

The population is educated, refined and cultured, which makes Bastrop a very de-

sirable home for the man of family. The people are sociable, affable and courteous, and educational advantages are excelled nowhere. A new \$15,000 schoolhouse, besides other handsome public buildings, ornament the town. The total taxable valuation of Bastrop county in 1905 was \$5,918,975 and in 1911 \$13,055,986. Mr. Hartford Jenkins is the efficient secretary of the Bastrop Commercial Club, an organization that is very active and doing a great work for the city.

CHARLES E. TRIMBLE.

DEVELOPMENTS AT AUGUSTA.

More Than \$5,000,000 to Be Spent in Improvements.

[Special Cor. Manufacturers Record.]

Augusta, Ga., January 1.

According to a statement prepared by the Chamber of Commerce, Mr. J. J. Farrell, secretary, the following extraordinary expenditures in the way of development are planned in Augusta for 1912: Stevens Creek power development, \$2,500,000; United States postoffice, \$250,000; Wheeler Heights, tourist hotel and colony, \$500,000; river bank flood protection, \$350,000; river channel, \$105,000; river work above city, \$3000; hospital and medical college, \$300,000; water-works addition, \$150,000; street railway improvements, \$200,000; river barge line, \$90,000; public warehouse and wharf, \$30,000; commercial hotel in city, \$60,000; new fair building, \$17,500; park system extension, \$15,000; fire department extension, \$10,000; Barrett plaza, \$15,000; new bridges, \$30,000; new sewers, \$30,000; new street paving, \$75,000; total, \$4,730,500.

To this must be added at least \$500,000 for ordinary structural improvements and new buildings, granting that there will be no more private buildings erected this year. This makes a total of \$5,230,000.

The Stevens Creek development has recently been acquired by J. G. White & Co. of New York, owners of the Augusta-Aiken Railway and Electric Corporation, and the engineers are already making plans for a dam that will develop a minimum of 20,000 horse-power. While it is not expected that the power will be turned on within 18 months, a great deal of the structural work will be done during the coming year.

Stevens Creek is about three miles above the Augusta locks system, and Pittsburgh capitalists have been acquiring the land and right of way for several years. Official announcement of the purchase of the property and the intention to begin work immediately was recently made known by Mayor Barrett on the authority of J. G. White & Co.

The Wheeler Heights Hotel plan, work on which will begin within a few weeks, contemplates the erection on Murray Hill, a short distance from the new city line, of a modern hotel for tourists and cottage colony, a casino, a five-acre lake, polo field, golf links and boulevard. The company has been formed with a paid-in capital of \$150,000, with Mr. Pinckney Steiner as president, Mr. R. Roy Goodwin as secretary. The project was worked up by Mr. Thomas W. Loyless, president of the Augusta Chronicle Co.

The hospital and medical college is to be built by the municipality and citizens who have been paying stated sums regularly for more than a year. The total project calls for a great many thousand dollars, but the amount stated above is for expenditure in 1912.

The barge line is a private enterprise, that is to succeed the present steamers now in use by one of the companies.

The fair building is a semi-public enterprise, the stockholders and bondholders

being Augustans, who form what is known as the Georgia-Carolina Fair Association.

The City Hotel is to be built by Mr. I. B. King on the site of the present King Building in the central part of the city, and is to be managed by Mr. Bryan Lawrence, who is well known in Southern hotel circles.

The river bank flood protection is paid for equally by the United States Government and the city.

The river channel and river works above the city are from the National Government appropriation.

The other items in the city works are larger than usual, because of the addition of three suburbs recently acquired.

ROY G. BOOKER.

Blewitt's Falls Dam Finished.

Chamber of Commerce,
Raleigh, N. C., December 30.

Editor Manufacturers Record:

Promptly on the 15th of December the last concrete was laid in the great dam at Blewitt's Falls, on the lower Yadkin River, and thus Constructor Frank C. Abbott kept his word. Some construction records were smashed in the work on this dam. Only a few days after it was finished heavy and long rains came, and with all six of the sluiceways open the water rose three feet above the top of the dam and made a small Niagara 56 feet high and 1650 feet long—the biggest waterfall yet seen in North Carolina. The dam is all right. The backwater reached 40 miles. A steamboat company has been chartered to operate boats on this sheet of water from Blewitt's Falls into Stanley and Montgomery counties. Only the finishing touches are now being given the hydro-electric plant at Blewitt's Falls, which the writer so fully described and was first to illustrate. All the wires are up at the Raleigh substation for the power to come in not later than February 1. The Carolina Power & Light Co., the owner, has tested its transmission wires from Raleigh to Henderson and found everything all right. It has stepped up the current to Fayetteville, Jonesboro, Raleigh and other points from 32,000 to 60,000 volts, in order to have everything ready for the coming in of the power from Blewitt's Falls. Raleigh has the unique position of being the only place in the South to get electric power from three streams, the Neuse, Cape Fear and the Yadkin, and it has besides an auxiliary steam plant, so that in case of low water in all the streams there is a reserve at hand.

FRED A. OLDS, Secretary.

Suffolk's Increasing Industries.

Board of Trade,
Suffolk, Va., December 28.

Editor Manufacturers Record:

Many new industries have been added to Suffolk this year and many substantial additions have been made. Among the larger manufacturing plants established during the year are: Suffolk Manufacturing Corporation, pants and overalls; Suffolk Packing Co., pork; buggy company, vehicles; Carr Knitting Mills, hosiery; Dixie Guano Co., fertilizers; Virginia Packing Co., canned goods and peanut products; Martin & Sons, storage; and Cobb Knitting Mills No. 2, hosiery. Several smaller industries were added and substantial additions were made by the Nansemond Grocery Co., wholesale groceries; Piedmont-Mt. Airy Guano Co., fertilizers; Bell Hosiery Mills, hosiery; L. R. Brothers Hardware Co., wholesale hardware, and Suffolk Horse Exchange, horses and mules. Among the industries to be set in operation early in 1912 are a wholesale shoe business, paper-box and

carton-manufacturing plant, and a handle and spoke plant. Under construction at the present time are a high-school building costing \$40,000 and a postoffice building costing \$75,000. Many handsome residences have been added during the year and a new hospital is in course of erection.

Suffolk now enjoys more than the distinction of being the "largest peanut market in the world," but the distinction of being one of the best locations in Virginia for manufacturing and jobbing, especially to manufacturers employing unskilled labor. Six railroads with rates based on water competition give Suffolk and its business interests advantages that are hard to overestimate.

Considerable attention has been paid to agriculture, with the result that agricultural improvements are being made daily, and the boys' corn, peanut and cotton clubs have put the older farmers to thinking.

H. N. FITZGERALD, Secretary.

FOR GOOD HIGHWAYS.

A Characteristic of the Spirit of Progressive Georgetown.

[Special Cor. Manufacturers Record.]

Georgetown, Tex., December 30.

Georgetown is on the Austin division of the Missouri, Kansas & Texas Railway, 30 miles north of Austin, and it is the terminus of a branch of the International & Great Northern Railroad. It is near the center of the State and accessible from all parts of the State. Its altitude is 100 feet greater than Austin, 285 feet greater than Dallas and 700 feet greater than Houston. The city is situated on the high south bluff of the San Gabriel River, just opposite the two forks. These are clean, sweet, pure and healthful streams of sparkling water that dash over graveled beds shaded by high bluffs of solid limestone, and wind their way through native groves of ancient forest trees, making an ever-changing landscape that wins the admiration of all who love nature unadorned. It is far removed from the malarial belt, and epidemics are unknown; too far southwest to be reached by cyclones, there never having in the memory of man been a destructive storm in this locality; high, well drained, well watered—the real natural advantages for a healthful town. These natural conditions have been taken advantage of, and this town has added strict and well-enforced sanitary laws to what nature has done.

The Georgetown and Jonah macadamized road was constructed in 1908. The foundation is crushed rock, placed on a well-rolled surface; this base is then packed with a 20-ton roller, then surfaced with gravel and rolled again. This road is complete from Georgetown to Jonah, a distance of nine miles, and is pronounced by experts as one of the best roads in the State. A number of other roads leading out of town are now under construction and will be paid for by the ordinary road tax and contributions from the citizens in towns and in the country.

Georgetown has, all told, 25 miles of macadamized streets and more than 20 miles of macadamized country roads leading into town. The city has a population of about 5000 happy, industrious and prosperous citizens, 90 per cent. of whom are Americans and Swedes. Its location for trade and commerce is good. Broad prairie farms are to the north, east and south, and a strip of timber to the west, with fine quarries of white limestone, well suited for building material and from which public buildings and business houses have been erected.

Georgetown is the county-seat of Williamson county, one of the best farming counties in the State. In 1908 this county

produced 126,000 bales of cotton, being the second greatest cotton-producing county in the world. The farmers of this county give much attention to diversification, raising much grain, hay and livestock. This considered, Williamson county can well claim rank among the very best farming counties in the State. Georgetown enjoys the trade of a broad, rich and well-tilled farming country, populated by an intelligent and up-to-date class of farmers, and country and town have prospered together. No boom, but a steady, substantial growth, and a mutual confidence each in the other; and so firmly is this confidence fixed, and so well established are the business enterprises in the town, that during the panic of 1907 neither of the banks of this town ever placed a limit upon the size of the depositor's check, the amount he could draw being measured only by the amount he had upon deposit.

The city has a very low tax rate—70 cents on \$100,000 valuation—the assessed values for 1909 being \$1,915,000 and their bonded debt amounted to only \$14,000. The credit of this city is second to none, and her bonds are sought after in the markets of the world.

Georgetown has a large and commodious public-school building that contains 15 well-equipped classrooms. This building was constructed out of native limestone at a cost of \$35,000, and notwithstanding the capacity of the present building the City Council has recently purchased a splendid site for a new high-school building. It is to be the most complete school building in the State, modern in architectural design and furnishings, and when completed will have public-school advantages enjoyed only by the larger cities.

The Southwestern University was projected by the joint action of the Texas conferences of the Methodist Episcopal Church South in 1869, located at Georgetown in 1873, and for 35 years has stood at the head of the Methodist educational schools of the State. Several thousand students have enrolled since its opening, and of this number more than 600 have graduated with academic degrees. The wisdom that located Southwestern University has been demonstrated. For a third of a century the institution has prospered until it has buildings, equipment and endowment aggregating \$300,000 in value, and has increased in patronage until it has enrolled a larger number of academic students of collegiate grade than any other university has ever before reported. Southwestern University is composed of the fitting school, which is a high-grade classical preparatory school; the college, the school of fine arts, the summer school of theology and the medical college located at Dallas. Mood hall and dormitory for men has recently been completed at a cost of \$80,000. This is one of the best-equipped buildings of its kind in the South. The ladies' annex building is an elegant structure built of white stone, four stories high and overlooking the surrounding country. The main building has been pronounced by competent judges the most beautiful single school building in the South.

The city has an extensive sewer system, which is being gradually extended to new communities, and will soon cover the entire town.

Mr. R. E. Ward is the Mayor of Georgetown and one of its most honored and progressive citizens. He is secretary of the Georgetown Commercial Club and is an active and patriotic citizen, never overlooking anything for Georgetown's welfare.

CHARLES E. TRIMBLE.

BIRMINGHAM IRON MARKET.

Conditions in the Industry at This Time of the Year.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., December 30.

With the advent of the new year the local iron and steel industry presents a decidedly more encouraging aspect than for many months past. This conditions is attributed to the fact that the selling prices for practically all of the lines represented have apparently reached their lowest levels, and that the period of inactivity in the several markets was of sufficient duration to adjust the supply to the demand effectually. It cannot be said that the markets referred to are now active, but indications favor a larger consumption generally, and the producing interests are in better position to maintain the prices quoted for their several products. The comparatively small percentage of active blast furnace capacity is, of course, very noticeable in a summary of conditions. It is not believed that the operation of additional furnaces will be necessary for some months, yet reliable information indicates that at the present rate of production the orders actually in hand, and against which shipment is to be made in the first half of the year, will take care of practically 75 per cent. of the make during that time, which is, of course, after taking into consideration the stock now on yards. The extent to which the trade is yet to provide for its requirement during the first half cannot be arrived at with accuracy, but the manufacturers of agricultural implements, cast-iron pipe, pumps and the large stove manufacturers are now making inquiry for such delivery, while the tonnage that has been submitted for shipment through the entire year runs well up into round figures. For this last the producers have not committed themselves, and those concerns who withdrew from the market for earlier deliveries adhere very closely to the positions taken. The most recent additions to order-books have been in the shape of small lots, which were not very attractive in the aggregate. Prices, however, were fully maintained, and the rate of shipment instructed to become effective during the month of January is sufficiently large in some cases to take care of the reductions that were made during the last weeks in December. The resumption of operations at local foundries after the holidays was very extensive, and the period of inactivity in a number of cases was considerably shorter than that of the previous season. The market is still quoted as below for shipments over the first half, but prices are no doubt firmer than at the time of last report. Quotations are per gross ton f. o. b. cars at Birmingham: No. 1 foundry and No. 1 soft, \$10.50; No. 2 foundry and No. 2 soft, \$10; No. 3 foundry, \$9.50; No. 4 foundry, \$9.25; gray forge, \$9.25; mottled and white, \$9.

Reports from the Southern charcoal iron market do not indicate any change in the views of any parties concerned, and we continue to quote that grade of iron at from \$22.50 to \$23 per gross ton at Birmingham.

The basic situation is practically the same as at the time of last report, with the output limited to requirements at local steel mills, which consist of the requirement at Ensley, Ala., and at Alabama City, Ala.

The water-pipe requirement for Portland Ore., of which mention has previously been made, was the most significant award in the pipe industry for comparatively recent dates. A number of small orders have just been placed with local concerns, and bids are now being considered on approximately 4000 tons of water

and gas pipe for the cities of Muskogee, Okla., and Minneapolis, Minn. The result of these bids will probably not be known for a week or ten days hence. The local foundries that suspended operations for Christmas have all been put into operation, and are receiving raw material supplies at a normal rate. With the exception of the lettings just mentioned above, the new business pending is in small lots, for which prices are being held firm. No change in any quotations are authorized, but at the schedule below municipal contracts where round tonnages are involved are probably taken at slight shading. Water pipe is quoted as follows per net ton f. o. b. cars here, viz.: Four-inch to six-inch, \$23; 8-inch to 12-inch, \$22; over 12-inch, \$21, with \$1 per ton extra for gaspipe. Special fittings are quotable at from \$50 to \$55 per net ton, owing to the nature and size required.

The market for old material was very active during the past week from a dealer's standpoint, owing to the tonnage offered from foundry and furnace yards. The additions to stocks as a result of the week's trading will be very material, but it is hardly probable that prices will be affected by reason of the continued strong demand for wrought and steel grades and the demand for machinery cast that naturally results with the continued scarcity of low-grade pig-iron. Dealers' asking prices are as follows per gross ton f. o. b. cars here:

Old iron axes, standard, \$15.50 to \$16.
Old iron axes, small, \$12 to \$13.50.
Old steel axes, light, \$13 to \$13.50.
Old steel axes, standard, \$14 to \$14.50.
Old iron rails, \$13 to \$14.
No. 1 railroad wrought, \$11.50 to \$12.
No. 2 railroad wrought, \$8 to \$8.50.
No. 1 country, \$7 to \$7.50.
No. 2 country, \$6.50 to \$7.
No. 1 machinery, \$8.50 to \$9.
Standard car wheels, \$11 to \$11.50.
Tram car wheels, \$8 to \$8.50.
Light cast and stove plates, \$7 to \$7.50.

The output from local coal mine operations is not yet normal, and a shortage is generally complained of. Abnormal prices are being received for spot shipments, but such conditions will no doubt be relieved during the coming week. Considerable interest is taken in developments relative to the contract this State made some months ago with the Pratt Consolidated Coal Co. for the operation of the "Banner" mines with all convict labor. It is not probable that the proposed output from such operations will be affected, although some change in the original agreement may be made.

The movement of foundry coke is increasing at the same proportion as the increase in the movement of pig-iron. The price for this grade of coke has been very steady for some months, while there is not sufficient volume of furnace coke offered to arrive at the market price.

TO FIGHT THE BOLL-WEEVIL.

Southern Railway Experts at the Call of Farmers.

[Special Cor. Manufacturers Record.]

Meridian, Miss., December 29.

With 13 agricultural experts in the field to advise farmers as to the best methods of increasing the yield of cotton per acre and growing it in spite of the Mexican boll-weevil, the Southern Railway Co. and affiliated lines through their cotton culture department propose to carry on a vigorous campaign against the spread of the pest during 1912. The work of the department is to be carried on not only in localities where the weevil has been found, but in territory to which it has not spread, in order that if it should spread farther eastward the farmers may be prepared for its coming.

The cotton culture department, which is under the direction of Mr. T. O. Plunkett, a highly qualified expert, whose headquarters are at Chattanooga, has recently been strengthened by the addition of new men, and the whole organization is better prepared to lend valuable assistance to the farmers of the South in combating the weevil. The personnel of the department is as follows, showing the different stations at which the field agents are located: W. C. Procter, Greenwood, Miss.; E. B. Randle, West Point, Miss.; A. H. Moorman, Lauderdale, Miss.; R. V. Jarrott, Waynesboro, Miss.; J. G. Shand, Thomasville, Ala.; J. E. Gray, Marion Junction, Ala.; T. U. Culver, Maplesville, Ala.; N. H. Person, Tuscaloosa, Ala.; Roland Turner, Anniston, Ala.; C. R. Shepherd, Attalla, Ala.; R. E. Grabel, Macon, Ga.; F. S. Long, Cuba, Ala.; E. E. Burrows, Okolona, Miss.

These men are splendidly equipped to give the farmers advice as to the preparation of their fields and the cultivation of their crops. The services of the agents are entirely free to all farmers along the lines of the Southern Railway and affiliated lines, the expense of the cotton culture department being borne by these companies in the belief that their interests are identical with those of the people they serve.

GROWTH AT MERIDIAN.

Constant Improvement the Policy in the Mississippi City.

[Special Cor. Manufacturers Record.]

Meridian, Miss., January 1.

Forty-eight years ago Meridian was only a flag station, and was known as Sowashee, named for a small creek or stream which flows through her suburbs. The name was changed by the Legislature to Meridian, and the progress that has been made by this city since that time has been notable. Meridian-made wares are sold in countries over the whole world, and the people each year grow richer and better and more prosperous in every way.

Permits issued by the building inspector for the past year were 312, representing an outlay of more than \$500,000 on residences and business houses. This was an increase over the year 1910 of more than \$200,000, while it was double the building of 1909. In this amount were not included expenditures for many structures for which there was no permit issued and which represented more than \$250,000. Nineteen hundred and twelve will no doubt see greater prosperity and building activities than any period of 12 months in the history of the city. Among the buildings that have already begun or are in course of planning, but which are assured, are the Stonewall Club home, three stories and of brick, to cost approximately \$30,000; the Carnegie public library for white people, and on which building will begin within the next 30 days; a Carnegie library for negroes, and which is now being erected; a seven-story office building by the Knights of Pythias to cost \$100,000; Hamilton Suburban Park, now in course of building at an expense of \$50,000; railroad terminals to cost more than \$100,000, and many other smaller items, besides a number that the owners and promoters will not give out a statement in regard to their operations.

The ground has been purchased and bonds in the sum of \$75,000 have been sold, the money now being in a local bank, for the erection of a handsome city hall and administration building. The people are awaiting the developments in the matter of purchasing property adjacent to the hall site that a larger and better building may be erected. It is proposed to build a city hall costing \$150,000 to meet the demands of the growing city and a progress-

ive community. With the building of the city hall upon the new site the property-owners have signified their intention of making certain improvements in their property in that vicinity, and these improvements will represent an outlay of more than \$250,000. Already plans have been accepted, and as soon as the building of the city hall is begun these plans which have to do with new buildings near the new city hall will begin.

During the past year bonds in the sum of \$200,000 have been sold for the building of good roads in Beat 1 of Lauderdale county. This beat is the Meridian beat, and the roads are those leading out from this city in eight different directions, the roads being five miles in length each, making 40 miles of improved highways, as fine as paved streets and equal to any roads in the land. Meridian now has as splendid a system of paved streets and highways of any city in the State. Paved streets go to all prominent residential sections of the city, and there were finished during the past year seven miles of paved streets, among which were those of wood block, granitoid, vitrified brick and bitulithic. Within the next few weeks there will begin the laying of additional streets to connect each of the paved highways with the paved streets of the city. This work will cost in the neighborhood of \$75,000. In the early summer several miles of city streets will be macadamized, thus making every important section of the city to enjoy fine streets.

Among the structures that have been built within the past year and which reflect the wonderful progress of Meridian, regardless of the low prices of cotton, were the Union Hotel, a handsome four-story brick building which replaced a single-story hot-lunch stand; the Citizens' National Bank Building, a seven-story stone reinforced steel and concrete building, the most modern structure in Mississippi; the New Standard Club-house, three stories, of brick veneer, the home of the wealthy Jews of Meridian; a manual-training school building, three stories, of pressed brick, costing about \$50,000, and making it one of the most complete in the South; three two-story brick fire stations, to replace antiquated wooden structures; an addition and alterations in the Federal building, costing \$65,000; nearly 100 miles of cement sidewalks, double street-car tracks for three miles, and many other improvements.

The greatest success achieved by the people of Meridian and tributary territory during the past 12 months was the building and operating of the great Mississippi-Alabama Fair, which proved to be the greatest exposition ever held in Mississippi and one of the best ever held in the South. The association was capitalized at \$100,000, with more than half that amount paid in capital. The fair was a success beyond compare, and netted above all operating expenses and expenditures of all kinds about \$6500. It will be even greater this year, so declare the officers and directors.

During the past year Meridian has secured two new railroads. The Meridian & Deepwater Railroad has already been built more than two miles out from the city, and a large number of teams are busily engaged in grading the road farther toward Myrtlewood, Ala., a distance of 47 miles, where it will connect with the Mergal lines and be operated into Pensacola, Fla. The city of Meridian has voted bonds in the sum of \$50,000 for this road, and bonds amounting to \$1,200,000 have been sold for the purpose of defraying the building of the road. Sam A. Neville of this city is president of the new road. The northern ter-

minal of the road will be Winona, Miss., and later it will operate to Memphis, Tenn.

Another railroad for Meridian is the Memphis & Pensacola Railroad, among the promoters of which is W. P. Dickenson of Chicago, who is financing the project; Chester H. Pond, a railroad builder of Moorhead, Miss., and who built several West Mississippi lines, and C. D. Smith & Co., railroad builders of Memphis, Tenn. This road will be built from Memphis to Meridian, thence to Pensacola, Fla. Three surveying parties are now staking the lines from this city to Pensacola, and work on the grading will begin within the next 30 days, both at Pensacola, at the southern extremity, and out from this city. The city of Meridian has voted bonds for this road amounting to \$50,000. Terminal properties have been purchased by the Meridian & Deepwater Railroad, for which they paid \$25,000, and the site is being cleared preparatory to the erection of handsome terminal stations and freight depots. The plan as accepted by the road is one of the finest that will be in the State.

The Memphis & Pensacola Railroad Company has likewise taken up the matter of terminals, and two sites are under consideration. The shops of the Memphis & Pensacola road will cost, according to the engineers' specifications, \$400,000. These shops will be located in this city. These shops of the Meridian & Deepwater road will also be placed here.

At an expenditure of more than \$30,000 A. J. Lyon & Co. of this city have, during the past year, installed the most complete cold-storage plant in the State. This plant has greatly increased the volume of business in the trucking industry of this section of East Mississippi.

The building of highways out from the city in eight directions has greatly enhanced the value of suburban property and has likewise caused scores of handsome suburban homes to be built in these districts.

Meridian is well lighted. Scores of handsome electric signs have been installed by the business men of the city, and the Meridian Light & Railway Co. has put up a big electric sign. This sign was erected during the past year, and with its thousands of electric bulbs is a shining light for Meridian.

The building of good roads and paved streets here have caused the past year to be the banner year in automobiles in Meridian, and 112 high-class automobiles were sold to Meridian people during the past year. The machines brought here last year represent at least \$200,000.

Such conditions as those noted go to prove that the low price of cotton has done but little damage and that Meridian's tributary territory does not depend entirely on the staple for sustenance.

The prosperity that has been so marked in Meridian and Lauderdale county throughout the past year is not confined to Meridian alone, but is an illustration of the conditions which exist throughout the eastern portion of the State. The boll-weevil wrought havoc in West Mississippi, but as yet has not done much damage to the territory of East Mississippi. The work of the cotton-culture department of the Southern Railway and allied lines is destined to save this land from such ravages.

A. C. GILL.

It is announced that the immigration service of the Gould lines, which has done effective work in Texas, is to be extended into Louisiana.

IN RED RIVER VALLEY.

Plans for Settlement of Scandinavians, Germans and Others.

W. A. Jones, secretary Louisiana Farm Lands Congress, Shreveport, La., writes to the MANUFACTURERS RECORD:

"The Red River Valley since the scene of 'Uncle Tom's Cabin' (which was laid on the Chipman plantation) has been renowned for its phenomenal cotton crops. The valley itself is an alluvial accumulation of centuries, and the soil is from 40 to 60 feet deep. In the old regime, when cotton was king, the planter put his entire acreage into that product. As this is the era of diversification and intensified farming, the Louisiana Exploitation Association has undertaken to take over a number of these large plantations and to cut them up into 10 to 60-acre tracts, placing on them Germans, Scandinavians, Bohemians and other nationalities who are accustomed to getting the highest production possible out of small acreages.

"The Trinity plantation will be settled up almost exclusively by Scandinavians. It is believed by their systems of cultivation and rotation of crops, together with climatic conditions and rainfall, that they will be able to raise three crops a year, and that the lands will net them, after defraying all expenses, over \$100 per acre.

"This will enable us to build up this rich alluvial valley rapidly and successfully. There is no section of the United States that will raise a greater diversity of crops than this."

TEXAS IRRIGATION.

Vast Projects to Be Completed in the Next Twelve Months.

[Special Cor. Manufacturers Record.]

San Antonio, Tex., December 29.

One hundred large projects to be completed in Texas this year will bring under irrigation approximately 150,000 acres of land, much of it never heretofore touched by plow, according to W. L. Rockwell, irrigation manager in Texas and Oklahoma for the United States Department of Agriculture. These irrigated lands will average in value, he said, more than \$250 an acre. Mr. Rockwell has just returned from a trip of inspection through West Texas.

Near Marfa Mr. Rockwell visited the scene of a dam being constructed by a Kansas City syndicate to form a reservoir and conserve flood waters sufficient to irrigate about 10,000 acres of land that will be ready for cultivation in 1912. At Fort Stockton about 10,000 acres of land are being prepared for irrigation from the Comanche Springs, which furnish a flow of 35,000 gallons a minute. In Hale, Floyd and Lubbock counties Mr. Rockwell found many individuals boring artesian wells to provide water for irrigation, and in the El Paso territory the irrigated lands are being planted in fruit orchards and alfalfa with great success.

Texas Irrigation Enterprise.

Referring to plans for Texas irrigation enterprises, the C. S. Young Company of San Antonio sends the MANUFACTURERS RECORD the following statement:

"Representatives of the C. S. Young Co. have returned from a reconnaissance survey of the Devil's River, preparatory to placing parties in the field to make preliminary surveys for the D. B. Chapin irrigation project.

"The Devil's River, which is estimated by Government engineers to afford the largest minimum flow of any river in Texas, will afford enough water to irrigate from 100,000 to 150,000 acres of land, and will develop an enormous power for commercial purposes. The canal necessary to carry the water to the available land for

irrigation will be more than 25 miles long, two and one-half miles of which will be a tunnel through the Devil's River-Sycamore Creek divide.

"The contract has just been let to J. B. Kelly & Son for the construction of an earth dam across the Long Hollow Canyon, a branch of the Medina River. The dam will form a storage reservoir for the storage of water now running to waste from flowing artesian wells and will be used for irrigating purposes. The impounded water will irrigate about 1000 acres of land. The C. S. Young Company is the engineer in charge."

BUILT BY GERMANS.

A Flourishing City Developing in Texas.

[Special Cor. Manufacturers Record.]

New Braunfels, Tex., December 28.

New Braunfels is a thriving and prosperous little city of about 5000 inhabitants, situated in an ideal location at an elevation of 1000 feet, 31 miles north of San Antonio and 50 miles south of Austin. Two large trunk railroad lines—the International & Great Northern and the Missouri, Kansas & Texas—with a large number of trains daily, give splendid traffic facilities. This offers special conveniences and advantages to the traveling public, the shopper and the pleasure-seeker alike. Its location suggests at once all the advantages obtained away from the busy, bustling city life, and yet its nearness to the larger places of interest permits a short excursion to these at any time desired.

New Braunfels, nestled at the foot of a picturesque range of hills, in a beautiful, fertile valley, yet at a high elevation, presents many delights for the sojourner. The little city is more like the villages of foreign countries of Europe, from which it is but a descendant. Built by Germans who came here to enjoy the rights of a free country, it presents everything on a firm basis and a solid foundation. It is clean, charming and thrifty, unsurpassed for its location, its genial people, substantial buildings, wide, clean streets, beautiful parks, pretty plazas, lovely lawns, shady walks and its moderate climate—a place to recuperate winter or summer. The city has four hotels and one large home, catering more especially to tourists, for the accommodation of the traveling public. New Braunfels is surrounded by interesting natural scenery, with one of the most beautiful natural parks, where thousands of crystal springs gush forth into beautiful streams that wind their way in various courses into a larger lake, and then forming into rivers that pass through the very limits of the little city.

The city is still considered in its infancy from a manufacturing standpoint, but it has already a good list of established industries. The most rapid growth has been attained within the past two years, and such has been the increase that it has been an eye-opener to its own people, and serves to show to the outside world that the opportunities here will bear close investigation. While it is a fact that most of the raw materials are shipped to Eastern factories, to be returned in the finished goods, yet New Braunfels is wide awake to the fact that these products should and will be manufactured at home in the near future. It has proven by its industries now in operation that manufacturing at home is a success, and it offers its favorable location, its railroad facilities, its cheap water-power and its extensive room for further manufacturing establishments to the interested investigator and investor. The city has at present two roller mills that turn out annually

220,000 barrels of flour, 1,030,000 bags of meal and 657,000 sacks of feedstuff; two corn shellers, with a capacity of 2,190,000 bushels; two grain elevators, with 225,000 bushels capacity, and a cottonseed-oil mill grinding 36,000 tons of seed and pressing therefrom over 35,000 barrels of oil, with an oil refinery operated in connection with it, to be enlarged at an early time. Annually 6000 to 10,000 head of cattle are fed at the mills. New Braunfels has a finely-equipped hydrated lime factory, owned by the H. Dittlinger Company and burning 146,000 barrels of lime; a stone-crusher establishment sending out 4015 carloads of crushed rock at various times; three tanneries, tanning the hides of 17,000 cattle into various kinds of leather; one horse-collar factory, which turns out 75,000 collars, and two whip factories, cutting and plating the hides of 1500 cattle into different kinds of whips.

The city has also one of the foremost bee and honey producing establishments in the South, operating over 1000 hives of bees, with an annual output of 100,000 pounds of honey and 600 pounds of beeswax; an ice plant, freezing 15 tons of clear ice daily; three bottling works, sending out 13,400 cases of soda water and other beverages; two commercial nurseries, putting out 321,000 trees, shrubs and plants; two cigar factories, supplying a large demand; a brush factory and a broom factory in their infant stage, and a number of cotton gins with a large capacity.

The city has an electric-light and power plant furnishing 300 K. W. lights and an extra 250 K. W. in power running continuously. The roller mills, oil mill, oil refinery, ice factory and corn sheller have a payroll of more than \$274,000 a year. The city has under construction a lime fertilizer mixing plant and lime plaster plant, a harness specialty factory and a coffee-roasting establishment. Besides a fine dam already in use, an extensive dam and power plant for the city water-works is under way, above which the water of the beautiful Comal and Guadalupe rivers, on which the little city is situated, will form a large lake, giving additional advantages. A modern tourist hotel is just completed.

Mr. Harry Landa, owner of the Landa Roller Mills and other manufacturing plants, and Mr. H. Dittlinger, president of the Dittlinger Lime Co., are two of the most active and progressive business men of New Braunfels. They have spared neither time nor money in the development of the valuable natural resources in and about the little city, and it is largely to their enterprise that New Braunfels has become known as the most interesting little city in Texas.

CHARLES E. TRIMBLE.

Reported Louisiana Water-power and Irrigation.

Reports state that Henry Floy and Elmer E. Corthell, engineers; F. W. Dunn, president of the Dunn Construction Co., and others, all of New York, contemplate the development of water-powers and the irrigation of extensive tracts of land in central and western Louisiana. Referring to these reports Mr. Floy wires the MANUFACTURERS RECORD as follows: "Those interested not yet prepared to publish details. About 1,000,000 acres proposed irrigated; probable investment to \$25,000,000; plans and specifications not yet prepared; amount power development depending on surveys being made." He writes as follows: "Only most tentative plans have been prepared and no specifications whatever have been drawn; field surveys, etc., are now under way."

LEAD AND ZINC IN 1911.

Details of Mining and Refining of the Metals.

The United States Geological Survey has prepared a preliminary statement of the lead and zinc mining industry in 1911. This statement is compiled by C. E. Siebenthal from the most reliable sources available at this time. It appears probable that the mine production of domestic lead in ore in 1911 made a gain of between 25,000 and 30,000 tons over the 395,313 tons produced in 1910, which, when compared with the estimated increase in the smelter production of domestic lead, 35,987 tons, indicates that domestic lead ore stocks at the smelters were considerably depleted during the year. This is emphasized by the fact that a large stock of lead ore was accumulated at a Western lead smelter now under construction.

It is believed that the mine production of recoverable zinc in ore was about 20,000 tons greater than the output of 327,712 tons in 1910. The increase in the output of domestic spelter in 1911 was apparently 21,328 tons. The quantity of zinc recovered as zinc pigments is not known at this time, so that conclusions as to zinc ore stocks cannot be drawn.

In Virginia the mine production of zinc and lead fell off considerably, apparently about 20 per cent.

The East Tennessee zinc district was very active in 1911. Two of the large zinc-smelting companies operated mines, and the output of the district was increased about 25 per cent. The Holston shaft has reached a depth of 300 feet and a large mill is planned.

In the Western Kentucky and Southern Illinois district the features of the year were the construction of a modern 500-ton concentrating plant at Rosiclare, Ill., and the development of a body of zinc ore near Marion, Ky. The production of zinc was small, if any, and the output of lead was about stationary.

The Upper Mississippi Valley region, according to the weekly reports of J. E. Kennedy, showed a gain of over 20 per cent. in zinc production and a loss of 20 per cent. in lead production for the year, the approximate output being 75,000 tons of zinc concentrates and 4600 tons of lead concentrates. The destruction by fire, late in the year, of the magnetic separator at Galena, Ill., and the electrostatic separator at Platteville was a severe loss to the district.

The Southeast Missouri disseminated-lead district fell off somewhat from the preceding year in its production apparently about 4 per cent. The Federal Lead Co. prospected and took over the property of the Madison Lead & Land Co. The North American Lead Co. and the Eastern Lead Co. were idle, but the remaining companies operated steadily.

The Joplin district, judging by the weekly sales reported in the local papers, fell off slightly in the production of zinc blende and silicate concentrates, but gained in the output of lead concentrates. In round numbers the production was 250,000 tons of blende concentrates, 20,000 tons of silicate and 45,500 tons of lead concentrates. The active competition for lead ore stimulated by the opening of the new Webb City smelter is credited with the increase in lead-ore production.

In Northern Arkansas, according to R. W. Willett, the production of lead ore was about the same as in the preceding year, but the zinc-ore output fell off about 25 per cent., owing to limited operation of the Red Cloud mine, the principal producer in 1910. The most noteworthy development of the year was the opening of the Philadelphia mine in the Rock Creek district, which, after the completion of

the mill, made a large regular weekly output.

In the Arbuckle Mountain region of Oklahoma one mill was completed and another was under construction at the close of the year. A shipment of blende concentrates was made, the previous output having been all carbonate ore. The production was about the same as in 1910.

The annual preliminary statement just issued by the United States Geological Survey shows that the zinc industry, in so far as production and consumption of spelter are concerned, enjoyed a year of continued normal growth. The total production of spelter for 1911 broke all records; the production from domestic sources alone exceeded the total production for any previous year in the history of the industry and exceeded the domestic production for any other year by more than 21,000 tons. Coupled with this increase in production there was a decrease of six-sevenths in imports and at the same time the phenomenally high exports of 1910 were increased by one-third.

The following figures have been compiled without change by C. E. Siebenthal of the Geological Survey from reports furnished by all operating smelters of zinc ores, showing their output for the first 11 months of the year and their estimated production for December. Figures showing the imports and exports for 11 months were obtained from the bureau of statistics, and to these figures estimates for December have been added.

The production of spelter from domestic ore in 1911 is estimated at 273,807 short tons and from foreign ore at 14,237 tons, a total of 288,044 tons, worth, at the average price, \$33,837,000, as compared to a total of 269,184 tons in 1910, made up of 252,479 tons of domestic origin and 16,705 tons of foreign origin. The production of spelter from both domestic and foreign ores, apportioned according to the States in which smelted, was approximately as follows: Illinois, 84,626 tons in 1911, as compared to 73,038 tons in 1910; Kansas, 97,790 tons in 1911, as compared to 105,697 tons in 1910; Oklahoma, 46,061 tons in 1911, as compared to 34,760 tons in 1910; all other States, 59,587 tons in 1911, as compared to 55,689 tons in 1910. The total production of spelter is equivalent to the output of 67,555 average retorts operating continuously through the year, or about 80 per cent. of the effective smelting capacity of the country when working 60 per cent. zinc concentrates.

An estimate of the production of refined lead in the United States in 1911 has been compiled by C. E. Siebenthal of the United States Geological Survey from reports by all the lead refineries and soft-lead smelters in operation during the year. These reports cover actual production for the first 10 or 11 months of the year and an estimate for the remainder of the year, and from them the figures of production are made up without change. The statistics of imports, exports and lead remaining in warehouse have been taken from the records of the bureau of statistics for 11 months, the figures for December having been estimated.

The statement shows that the lead-smelting industry had a busy year and that the total production exceeded the banner production of 1910 by a comfortable margin. The quantity of foreign lead smelted and refined in bond in the United States was the smallest since 1905, but this was more than offset by the increase in the production of domestic desilverized and soft lead. The 1911 production of soft lead, including that recovered in the form of pigment, figures for which are not yet available, must have nearly, if not quite, equaled the output of desilverized

lead. A feature of especial interest was the enormous reduction—practically the wiping out—of stocks of foreign lead in bonded smelting warehouses.

The total production of refined lead, desilverized and soft, from domestic and foreign ores in 1911 was approximately 487,520 short tons, worth at the average New York price \$43,876,800, compared to a production of 470,380 tons in 1910 and 448,112 tons in 1909. These figures do not include an estimated output of 13,195 tons of antimonial lead, against 14,069 tons in 1910 and 12,806 tons in 1909. Of the total production, desilverized lead of domestic origin, exclusive of desilverized soft lead, is estimated at 208,428 tons, against 193,213 tons in 1910, and desilverized lead of foreign origin at 89,706 tons, compared to 108,553 tons in 1910. The production of soft lead from Mississippi Valley ores is estimated at 189,386 tons, compared to 169,244 tons in 1910, which means that Missouri retains first place among the lead-producing States. The final figures for the production of soft lead in 1911 are likely to show an increase of a thousand tons or so over those above given, because the argentiferous-lead smelters and refineries undoubtedly treated more or less soft-lead ore from the Mississippi Valley which is not taken into account in their preliminary estimates.

PRODUCTION OF COPPER IN 1911.

Output Exceeds That of 1910, According to United States Geological Survey.

Statistics and estimates received by the United States Geological Survey from all plants known to produce blister copper from domestic ores and from all Lake mines indicate that the copper output from the United States in 1911 exceeded that of 1910 and nearly equaled the record production of 1909.

The figures showing smelter production from domestic ore, which have been collected by B. S. Butler of the Survey, represent the actual production of each company for 11 months and include an estimate of the December output. The November figures for a few companies were not available, and these companies furnished estimates for the last two months of the year. According to the statistics and estimates received, the output of blister and Lake copper was 1,091,554,000 pounds, against 1,080,159,509 pounds in 1910 and 1,092,951,624 pounds in 1909.

Statistics showing the output of refined copper by plants in the United States are not collected by the Geological Survey at this time. Figures published by the Copper Producers' Association for the first 11 months of 1911 indicate that the production of marketable copper by the regular refining plants from all sources, domestic and foreign, will amount to about 1,428,000,000 pounds, against 1,453,000,000 pounds in 1910.

According to the Bureau of Statistics, imports of pigs, bars, ingots, plates and old copper for the first 11 months amounted to 244,879,504 pounds, and the copper content of ore, matte and regulus imported amounted to 63,466,781 pounds. If the imports for December were equal to the average monthly import for the first 11 months the amount of copper entering the United States for the year was about 336,000,000 pounds, against 344,435,771 pounds in 1910.

Estimates based on figures for the first 11 months, published by the Bureau of Statistics and also by the Copper Producers' Association, indicate that the exports of copper will considerably exceed the exports of 1910, and that they may be as much as 750,000,000 pounds.

The output of copper from Tennessee

will show some increase over the 16,601,777 pounds produced in 1910. This increase is due to the enlargement of the acid plants connected with the smelters of the Ducktown district, which permitted the smelting of more ore. The production of sulphuric acid is now an important factor in the smelting industry of the Ducktown district.

PRINTING AND PUBLISHING.

The Growth of American Periodicals in Five Years.

In the five years between 1904 and 1909, according to the Census Bureau, the capital invested in the printing and publishing business in this country increased from \$432,854,000 to \$588,346,000, or 36 per cent.; the number of employees from 219,087 to 258,434, or 18 per cent.; the amount of wages paid from \$127,196,000 to \$164,628,000, or 29 per cent., and the value of products from \$552,473,000 to \$737,876,000.

The total number of newspaper and periodical publications was 22,143 in 1909 and 21,848 in 1904, an increase of 1 per cent. The aggregate average circulation per issue—daily, Sunday, weekly, semi-weekly, tri-weekly, monthly and other—was 164,468,190 in 1909 and 150,009,723 in 1904, an increase of 10 per cent.

The dailies increased in number from 2452 to 2602, or 6 per cent., and in circulation from 19,632,003 to 24,217,127, or 23 per cent.

Sunday newspapers increased in number from 494 to 520, or 5 per cent., and in circulation from 12,022,341 to 13,347,282, or 11 per cent. The Sunday editions of dailies are included with Sunday newspapers both in number and circulation.

Weeklies increased in number from 15,006 to 15,097, or 1 per cent., and in circulation from 30,226,717 to 40,822,965, or 13 per cent.

Semi-weeklies and tri-weeklies increased in number from 703 to 708, or 1 per cent., but their circulation decreased from 3,233,658 to 2,648,308, or 18 per cent.

Monthly publications decreased in number from 2500 to 2491, or less than 1 per cent., and in circulation from 64,306,155 to 63,280,535, or 2 per cent. Many States shared in these losses, but especially Maine and New York, from each of which a decrease of over 2,500,000 in circulation was reported.

The greatest number and circulation appear both in 1909 and 1904 for publications devoted to news, politics and family reading—the ordinary newspaper, daily and weekly. The number increased from 16,578 to 17,700, or 7 per cent., and their daily average circulation from 43,285,399 to 61,080,140, or 41 per cent.

Periodicals devoted to general literature show the next largest circulation per issue, increasing from 30,615,577 to 31,322,035, or 2 per cent. The number rose from 328 to 340, or 4 per cent.

Religious publications followed with 29,523,777 circulation in 1909 and 22,383,631 in 1904, an increase of 32 per cent. Their number was 1287 in 1904 and 1251 in 1909, a decrease of 3 per cent.

Journals devoted to society, art, music and fashion numbered 164 in 1909 and 155 in 1904, an increase of 6 per cent., but their circulation per issue decreased from 15,289,431 to 13,445,661, or 12 per cent.

Agricultural, horticultural and dairy publications decreased in number from 360 to 316, or 12 per cent., but increased in circulation from 8,106,275 to 11,327,253, or 40 per cent.

Newspapers and periodicals published in the interest of fraternal organizations decreased in number from 450 to 419, or 7 per cent., but increased in circulation

from 5,356,427 to 6,982,235, or 30 per cent.

Trade journals also increased in number from 627 to 685, or 9 per cent., and in circulation from 3,428,596 to 3,572,441, or 4 per cent.

There were more journals devoted to education and history in 1909 than in 1904, there being 202 in 1909, compared with 173 in 1904, a gain of 17 per cent., but the circulation fell off from 2,119,797 to 1,879,383, or 11 per cent.

A notable increase was in publications devoted to science and mechanics. These rose in number from 83 to 139, or 67 per cent., and in circulation from 525,523 to 1,421,955, or 171 per cent.

The number of publications classified under "commerce," "finance," "insurance," etc., was 264 in 1909, against 364 in 1904, a loss of 27 per cent. The circulation was also reduced from 2,470,832 to 1,411,738, or 43 per cent.

Of the remaining newspapers and periodicals the character of which is specified below published in the interest of medicine and surgery increased in number from 192 to 197, or 3 per cent., while decreasing in circulation from 1,054,948 to 931,584, or 12 per cent. College and school periodicals numbered 271 in 1909 and 178 in 1904, an increase of 52 per cent. Their circulation was 330,705 in 1909, against 248,240 in 1904, an increase of 33 per cent.

Law journals decreased both in number and circulation. They numbered 56 in 1909 and 81 in 1904, a loss of 31 per cent.; their circulation was reported as 151,346 in 1909, as compared with 194,035 in 1904, a loss of 22 per cent.

The number of newspapers and periodical publications in the English language increased from 20,599 to 20,746, or 1 per cent., but the circulation advanced from 142,441,068 to 155,437,393, or 9 per cent.

The entire foreign and foreign-English press increased from 1249 to 1397, or 12 per cent., and its circulation from 7,568,655 to 9,030,797, or 19 per cent.

The lead is retained by publications in the German language. Although the number decreased from 700 to 692, or 1 per cent., the circulation increased from 3,922,227 to 4,434,146, or 13 per cent.

The circulation of publications in the Scandinavian group was next greatest, although it decreased from 1,149,619 to 1,118,601, or 3 per cent. The loss in number was 1 per cent., namely, from 162 to 161.

Slavonic publications increased from 138 to 191, or 38 per cent., and their circulation from 662,987 to 1,038,274, or 56 per cent.

The Italian publications show the greatest percentage of gain in number, from 63 to 104, or 65 per cent., while the French show the greatest percentage of gain in circulation. The latter newspapers and periodicals, although decreasing in number from 46 to 39, or 15 per cent., increased in circulation from 252,135 to 446,739, or 77 per cent., while the Italian circulation rose from 319,450 to 500,475, or 57 per cent.

The "all other" group of publications embraced those published in Arabic, Armenian, Chinese, Dutch, Finnish, Gaelic, Greek, Hawaiian, Hebrew, Indian, Japanese, Korean, Portuguese, Spanish, Syrian, Welsh and Yiddish. The total number of these increased from 140 to 210, or 50 per cent., and their circulation from 1,262,237 to 1,495,562, or 18 per cent.

Rutledge Smith, industrial agent of the Tennessee Railroad Co., is quoted to the effect that during the past year a Cookeville (Tenn.) concern has shipped more than 6,000,000 dogwood shuttles to Liverpool.

Alabama Iron and Coal.

[Birmingham News.]

While official figures will hardly be ready for publication for four weeks, indications are that the difference between the year's output of coal in 1910, the State's banner year, and this year will not be so very great.

In 1910 the coal production in Alabama reached 16,139,228 tons, and while it is not believed these figures will be reproduced this year, it is expected the aggregate production for 1911 will not be a million tons under that amount. During several months of the present year there was a reduction in production at coal mines. At some mines there will be a material increase shown in the way of output.

There will be a smaller loss of life around coal mines this year than was recorded in 1910, notwithstanding the fact that 128 men lost their lives in the Banner disaster this year. The total fatality list in 1910 showed 238 men killed. The record so far is under 200, but seven men being reported killed during November and December.

Notwithstanding that trade in pig-iron was slack in 1911, the total production for the year is far less than half a million tons under what it was in 1910, the banner year.

The figures given out as to pig-iron production for the year, with the December production estimated, for the two years follow:

	1910.	1911.
January.....	170,918	139,174
February.....	152,100	118,699
March.....	180,038	145,552
April.....	172,739	146,910
May.....	164,248	131,804
June.....	158,869	131,840
July.....	145,369	124,585
August.....	141,097	135,395
September.....	149,990	162,428
October.....	161,294	149,232
November.....	166,447	156,436
December.....	143,839	*150,000
Totals.....	1,906,939	1,687,055

* Estimated.

"Good People or None."

[Washington Post.]

The South is making rapid strides agriculturally and its manufacturing opportunity is practically limitless, as President Finley eloquently sets forth in an interview for *The Post*. Yet, as the Southern Railway magnate observes also, there are metes and bounds to the South's activities in industrial expansion in so far as immigration is concerned.

While the door is not closed to the foreigner, there is an outspoken disposition to let the North have a monopoly in the domiciling of the class of immigrants now arriving from Europe. Albeit, the negro problem has been solved and the slow increase in numbers of that class of laborers betokens a sharp demand for help in the near future, the South is strongly disposed to rely on attracting native-born Americans from the North in sufficient numbers to meet her needs. In some of the States, however, there is no objection to the coming of colonies of assimilable peoples of foreign birth, but the line is drawn there—non-assimilable races are undesirable.

Governor Mann of Virginia having recently pointedly stated the position of the South toward immigration, saying that the best interest of each State is to be subserved by inducing "good people or none" to seek homes in that section, the MANUFACTURERS RECORD has gone to the pains of getting the views of other Governors in the northern tier of the cotton States, including West Virginia, lying outside the belt. Governor Glasscock of that State writes that West Virginia, in spite of her great industrial expansion, has absorbed only 65,000 foreign immigrants in the past twelve years, as against 3,000,000 by New York and 1,800,000 by

Pennsylvania. West Virginia welcomes the English, the Scotch and the Irish because they are of the stock of the pioneers who reclaimed this country from the wilderness.

Governor Hooper of Tennessee heartily concurs with Governor Mann's views. Tennessee would like the pick of the foreigners, but it would not pay the State to separate the sheep from the goats, so a systematic effort is to be made to induce immigration from the North and Northwest. Governor Cruce of Oklahoma, perhaps the most "Northern" of the Southern States, is quite as emphatic as the others in deprecating any flooding of the South with undesirables. "Neither the South nor any other section," says Governor Cruce, "can ever be developed by an unprogressive or criminal population." He sets his face also against the movement that seems to be afoot to dump the criminal and unemployed of the great cities of the East into the rural districts of the Southwest.

To Use Intercoastal Canal.

[Special Cor. Manufacturers Record.]

San Antonio, Tex., December 30.

Capt. A. E. Wickham, a resident of Seadrift, a little settlement on the Texas coast, and owner of a schooner named *The Margeurite*, proposes to organize a \$60,000 stock company to maintain a fleet of freight boats along the Intercoastal Canal, which will be completed, it is said, before the beginning of next summer. He purposes establishing a wharf and warehouse at each principal point on the canal and to operate five boats between Houston and Galveston and Aransas Pass, beginning work on five boats at once so they will be ready for use when the canal is opened. He claims he will be able to give as good service as the railroads at about one-half the present freight rate.

The Intercoastal Canal will extend along the Texas coast between the mainland and the islands that form an almost unbroken chain between Galveston and Brownsville. Only about 15 miles of the distance between Galveston and Aransas Pass is yet to be dredged.

Wants American Manufactures.

S. Sannatzo, Commission Representative, Athens, Greece, writes to the MANUFACTURERS RECORD:

"The products in which I am interested are the following: Printing and writing paper; chaki for uniforms; benzine for motor cars; crayons; motor cars; pianos; gum for Turkish loukoumes (starck); hohogoni (Tabasco, Cuban and San Domingan); cloth for furniture; clothes for ladies and gentlemen; leathers and soles for boots; stoves; gold and diamond imitations; cloth for umbrellas, and any other article salable in eastern district of Europe (Greece, Turkey) and Asia Minor, etc., with prices that can compete with the European products; manufacturers interested to base prices f. o. b. Piraeus; payments effected by one of the banks of this city upon delivery of shipping documents."

According to the census bureau, the number of running bales of cotton ginned up to December 13 last year was 13,769,906, compared with 10,695,443 in 1910 and 9,258,085 in 1909.

According to the estimate of the State Comptroller, the total wealth of Texas in 1911 was \$2,515,632,745, an increase over 1910 of \$128,660,146.

The latest quarterly report of the State Board of Agriculture of West Virginia is devoted to the subject of farmers' institutes.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Beaumont, Tex.—City voted \$60,000 bond issue for street paving.

Orange, Tex.—Orange county voted \$200,000 bond issue for road construction.

Sour Lake, Tex.—Road District No. 2 voted \$50,000 bond issue for road construction.

Victoria, Tex.—Road District No. 2 of Victoria county voted \$200,000 bond issue for road construction.

Salem, P. O. Winston-Salem, N. C.—Town voted \$15,000 bond issue for street improvements.

Lakeland, Fla.—City voted \$60,000 bonds for brick street paving.

Fulton, Mo.—Fulton Eighth-Mile Road District voted \$100,000 bond issue for road improvements.

Bonds to Be Voted.

Dublin, Ga.—Laurens county will vote January 9 on \$350,000 bond issue for constructing roads, etc.

Austin, Tex.—City will vote about February 1 on probably \$500,000 bond issue for street paving, etc.

Vicksburg, Miss.—City will vote January 23 on \$100,000 bond issue for street paving.

Haskell, Tex.—Haskell county will vote, it is reported, on \$75,000 bond issue for road construction.

Wharton, Tex.—Commissioners' Precinct No. 1 of Wharton county will vote January 19 on \$300,000 bond issue for road construction.

Contracts Awarded.

Beltsville, Md.—State Roads Commission awarded contract at \$52,507.68 to construct Baltimore-Washington Boulevard.

Maplewood, Mo.—City awarded contract at \$21,240 to pave Manchester road, and at \$18,183 to pave several thousand feet of sidewalk.

Ellicott City, Md.—City awarded contract for constructing six-inch water macadam road; cost \$5300.

Hamilton, Ala.—A. F. Bearden, Birmingham, Ala., has contract to grade, drain and gravel two and one-half miles of State-aid roads.

Contracts to Be Awarded.

Bastrop, La.—City receives bids until January 15 for constructing concrete walks.

Tuscaloosa, Ala.—City receives bids until January 9 to construct, improve or pave sidewalks, curbing and combined curbing and guttering.

Denison, Tex.—City will pave Main street.

Marlinton, W. Va.—Pocahontas county received bids until January 2 for constructing about 172 rods of road.

Shreveport, La.—Caddo parish will construct 25 miles of gravel or macadam roads; amount available, \$180,000 annually.

Ponca, Okla.—City receives bids until January 8 for 10,000 square yards brick block paving and 2800 linear feet combined concrete curb and gutter, etc.

Binghamton, Tenn.—City receives bids until January 9 for constructing 28,743 square feet concrete sidewalk, 9337 linear feet curb, 4960 feet gutter, 1400 cubic yards excavation, 19,700 square yards gravel and 200 feet 24-inch and 350 feet 30-inch soil pipe.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

ROCK ISLAND'S BIG PLAN.

New Mississippi Bridge and Extensive Terminals Costing Millions at Memphis.

The Arkansas & Memphis Railroad Bridge & Terminal Co. is the name of a new corporation backed by the Rock Island Lines, and which has just applied for a charter in Tennessee with capital stock of \$1,000,000. It proposes to build another bridge across the Mississippi River at Memphis, and also to erect freight warehouses and stations. J. T. Harahan of Chicago, formerly president of the Illinois Central Railroad, is one of the incorporators, and will, it is stated, be its president. He is quoted saying that several millions of dollars will be spent for the proposed improvements, and the total is variously estimated between \$10,000,000 and \$20,000,000. The other incorporators are C. H. Raine, J. A. Reichman, B. L. Mallory and E. E. Wright, all of Memphis.

Plans for the improvements are being prepared by the Rock Island, the chief engineer of which is J. B. Berry at Chicago, and he, it is understood, will have general supervision of the construction. Lands which have been bought at Memphis during the last several months are along the river front, with a strip extending back as far east as South 4th street, for the approaches to the new bridge. Terminal yards and depots will be erected thereon.

Mr. Harahan is quoted as saying that the new bridge will provide facilities that are needed to insure the proper handling of traffic in and out of Memphis by the present railroads, and also by other lines which are seeking entrance there. Expenditures will be made for large freight warehouses in the city in addition to the terminal facilities. The terminals of the Rock Island at Memphis are now inadequate for present business, and it is absolutely necessary that larger facilities should be provided to meet the requirements of growth. A bill will soon be introduced in Congress to authorize the construction of the bridge. As soon as it passes and other necessary arrangements are made with the city of Memphis it is intended to begin construction.

As to a new passenger station, it appears that it will be the structure that the Illinois Central is to erect and in the use of which the Rock Island and the Frisco systems have agreed to participate. Other than this, the improvements may be solely in the Rock Island system.

VOTES \$10,000,000 NOTES.

Western Maryland Going Ahead Vigorously With Plans to Increase Facilities.

The Western Maryland Railway Co. has authorized an issue of \$10,000,000 of 5 per cent. 3½-year gold notes secured by mortgage with the Equitable Trust Co. of New York as trustee, and has issued and sold \$8,000,000 of them to a syndicate there, the proceeds to be devoted to providing increased facilities for use in connection with the Connellsville extension that will soon be completed. The securities are dated January 1, 1912, and may be redeemed before maturity on three months' notice.

Concerning the improvements, it may be recalled that the company has plans under way for enlarging the terminals at Baltimore, both at Port Covington on the river and at Hillen Station in the heart of the city. At Cumberland, Md., other termi-

nal improvements are in progress. It is also contemplated to build a new route through the Blue Ridge, probably south of the present crossing of that range, to obtain easier grades for the loaded trains coming from the Pittsburgh district to tidewater at Baltimore. Some double-tracking may also be done, although this detour line would be practically a second tract, as the present route can be used for empties westward. New equipment, for which specifications have been prepared, will also be purchased.

As heretofore announced, the Western Maryland is assured of a large amount of new traffic from the New York Central lines immediately upon the completion and opening of its extension to Connellsville, Pa., and it is expected that the natural growth of the new business will be very large. A big addition is being made to the Hillen yards at Baltimore, and the terminal on the water front is also being considerably extended. These betterments are directed especially toward increasing the facilities for freight service, although something is being also done with regard to passenger traffic. The passenger station at Baltimore will not, however, be enlarged at this time.

NORFOLK SOUTHERN.

Rumors That It Has Extensive Plans Under Consideration.

Various reports are circulating in North Carolina concerning the purposes of the Norfolk Southern Railroad Co., which recently acquired the Raleigh & Southport, the Durham & Charlotte and the Aberdeen & Asheboro railroads. The latest are that the company intends to link up with the South Atlantic Transcontinental plan of Col. S. A. Jones of Waynesville, N. C., and get a line through the mountains to Knoxville, Tenn., and also that it has its eyes upon Atlanta for a Southern terminus.

That the road will extend to Charlotte, N. C., appears to be assured; the rest is speculation for the present, at least. Yet a recent report from Raleigh said that E. C. Duncan, who is also a director in the Norfolk Southern, had gone to New York to attend a meeting of directors of the North Carolina Transcontinental Construction Co., that is interested in the South Atlantic Transcontinental Railway plan. Other directors in the latter are said to be T. Coleman Dupont of Wilmington, Del.; V. L. Mason, W. H. Strayton and Henry Content of New York city, Mr. Mason being president and Mr. Strayton vice-president. Edward F. Cloran is treasurer and Arthur H. Faust secretary.

AUSTIN TO THE GULF.

Colonel Lott Concentrating Energy on Plans for a Line About 175 Miles Long.

Col. Uriah Lott of Corpus Christi, Tex., is quoted saying that survey will begin within six weeks for his proposed railroad from Austin, Tex., to Mustang Island, immediately south of Aransas Pass (not Port Arthur, as previously reported), and that the route is via Lockhart, Gonzales and Sinton. It will be about 175 miles long. This is to be the first of several lines which he proposes to construct, the others to follow being one from San Antonio to Kingsville, Tex.; another from Brownsville, or some other point on the Mexican border, to Mercedes, Tex., and probably a branch out of Austin. The line from Austin to the coast is the principal object at present. The lines will eventually, it is said, reach Fort Worth.

Colonel Lott was a leader in the building of the San Antonio & Aransas Pass Railway and the St. Louis, Brownsville & Mexico Railway. Concerning the Rio Grande country, he is reported as saying

that its rapid development shows that there is business enough already to support another railroad.

GOING TO HARBOR ISLAND.

New Railroad to Terminate Near Aransas Pass—Also on the Rio Grande.

A. L. Matlock, president of the Gulf Coast Immigration Co., San Antonio, Tex., sends information that the contractors have given bond and are now procuring and assembling material to begin construction in February on the proposed San Antonio, Rockport & Mexican Railroad, of which he is vice-president and a director. It will be laid with 90-pound rails and otherwise built in a superior manner.

The work to be done immediately is the building of a line from San Antonio directly south via Crowther to a point on the Rio Grande near Mission, Tex., with a branch southeast from Crowther to Rockport and Harbor Island, where half a mile of docks are to be constructed. Thus 370 miles of railroad are to be built without delay. Afterwards it is planned to build from San Antonio northwest to San Angelo, Tex., on the "Orient" Railway, about 175 miles, and from Mission to Tampico and Mexico City, making altogether about 2000 miles of track. It is estimated that when all is accomplished about \$40,000,000 will be invested. Financing has been arranged, and construction will begin as stated.

In connection with the enterprise the oil fields at Crowther, 62 miles south from San Antonio, will be developed. They also contain gas, coal and kaolin, which will likewise be produced. The English interests in the matter were represented by Edward Cowper-Thwaite, an engineer who personally investigated and inspected the plans and the regions to be developed. It is said that \$2,000,000 have been set aside to develop the Crowther properties represented by S. A. Hopkins. The names of the English syndicate concerned are not disclosed.

The officials of the railroad company are R. R. Russell, president; A. L. Matlock, vice-president and general counsel; J. H. Haile, treasurer; Butler L. Knight, secretary, the directors being Messrs. Russell, Matlock and Haile, besides S. A. Hopkins, John T. Rieves, H. W. Quinan, J. W. Davidson and W. A. Lowe.

New Equipment, Rails, Etc.

The Illinois Central has ordered 500 box cars, according to a report quoting an official.

The Western Maryland's equipment orders will include 500 all-steel 50-ton hopper cars, 500 all-steel 50-ton drop-bottom gondola cars, 500 steel underframe 40-ton box cars, 1000 steel underframe 50-ton drop-end and drop-bottom gondola cars, 18 steel underframe passenger cars, 10 steel underframe 60-foot baggage cars, 2 all-steel postal cars, 2 steel underframe dining and club cars and 2 steel underframe postal and express cars, besides 10 Pacific-type passenger locomotives and 15 consolidation freight locomotives.

The Burlington Route has ordered 1000 gondola cars from the Pressed Steel Car Co., Pittsburgh; 1500 gondola cars from the American Car & Foundry Co., St. Louis, and 25 locomotives from the Baldwin Works, Philadelphia.

The Missouri Pacific Railway has awarded a contract for 500 box cars to the Standard Steel Car Co., Pittsburgh.

The Chesapeake & Ohio Railway has placed a contract with the American Car & Foundry Co. for 200 steel underframe flat cars.

The Rock Island Lines have ordered 500 furniture cars and 2500 box cars from

the Pullman Company, Chicago, and 200 ballast cars from the Rodger Ballast Car Co., Chicago. It is also in the market for 700 hopper cars.

The Woodward Iron Co., Birmingham, Ala., has given an order to the Pressed Steel Car Co. for 100 freight cars.

The Pennsylvania Railroad has completed at its Altoona shops an unusually heavy freight locomotive for mountain service. In working order, with tender, it weighs 668,900 pounds, or over 334 tons. It has four cylinders, each 27 inches in diameter, and 16 driving wheels, each 56 inches in diameter. It is of the type known as H-H-1.

The Southern Railway has ordered 21,500 tons of open-hearth steel rails from the Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

From Red River to Jefferson, Tex.

T. E. Bird, secretary of the Vivian (La.) Progressive League, says that a company will be incorporated about January 5 to build the proposed railroad from the Red River to Jefferson, Tex., 36 miles. G. H. Cravens is the chief engineer for the plan, whose promoters have not yet announced themselves. Bonuses are being sought. There are 17 miles already built from the Louisiana boundary to Jefferson; the rest to be constructed is from the State line via Vivian to the Red River. The route lies through the gas and oil fields in Caddo parish, and includes two small bridges over Black Bayou, one east and one west of Vivian. The country is level. Connections will be made near the Red River with the Texas & Pacific and the Texarkana, Shreveport & Natchez railroads; at Jefferson with the Missouri, Kansas & Texas and the Texas & Pacific.

Louisville & Nashville Surveys.

Engineers for the Louisville & Nashville Railroad are reported surveying from Athol, Ky., on its Lexington & Eastern division in the west of Breathitt county, south along the Middle Fork of the Kentucky River to Hyden, the county-seat of Leslie county, 30 or 40 miles. This would take the line into a region that is now without railroad facilities, and would perhaps connect at some point south of Hyden with the Wasioto & Black Mountain Railroad that the Louisville & Nashville is building in Harlan county immediately south of Leslie.

Extends Its Plans.

The Harrison Mineral Belt Railway Co. of Harrison, Ark., has been granted amendments to its charter, changing its name to the St. Louis, Arkansas & Pacific Railway Co. and increasing the authorized capital stock from \$80,000 to \$2,080,000. It is also now proposed to build from Harrison to Fallsville, Ark., 40 miles from Jasper, Ark., to Pontiac, Mo., about 50 miles. Other construction may also be undertaken later. J. H. Kuder, Harrison, Ark., is secretary of the company.

C. & O. Refunding Mortgage.

The Chesapeake & Ohio Railway recently filed a mortgage to secure \$125,000,000 of refunding and extension 4½ per cent. bonds that were authorized last spring for converting various issues of the company as they mature, and also to provide for improvements and extensions in the future. An officer of the road is reported saying that none of the securities will now be offered, nor does it expect to market any of them soon.

Trinity Valley & Northern Plans.

The Trinity Valley & Northern Railway proposes to build from Dayton to Lum's, Tex., 18 miles. The line is located from Lum's to Lamb, seven miles, but will not

be built immediately. The construction will include nine timber trestles. Connections will be made with the Texas & New Orleans Railroad of the Southern Pacific system at Dayton, Tex., and with the Beaumont, Sour Lake & Western, a Frisco line, at Fullerton, Tex. Five miles of route are through rolling country; the rest is level. R. S. Sterling is president; Alf Bennet, vice-president; J. J. Balderach, secretary and treasurer, and A. E. Kerr, general manager. A. J. Wise of Houston, Tex., is chief engineer.

Railroad Notes.

The Jacksonville (Fla.) Terminal Co. built two and a half miles of line during the past year.

The Woodville Railroad Co., which is building 10 miles of line from Wakulla to Crawfordville, Fla., has completed one mile from Wakulla to Wanita.

J. W. Higgins has been appointed general manager of the Missouri Pacific-Iron Mountain Railroad to succeed A. W. Sullivan, resigned. He has been assistant general manager since March 1, 1905.

M. M. Cooke has been appointed chief engineer of the Wichita Falls Route, including the Wichita Falls & Northwestern and the Wichita Falls & Southern railways. Headquarters at Wichita Falls, Tex.

MINING

SOUTHERN COAL IN 1911.

Estimated Production in Leading States of That Section.

The production of the Appalachian coal fields in 1911 is discussed in a statement given to the press by Edward W. Parker of the United States Geological Survey. Mr. Parker states that in general the condition of the coal-mining industry in 1911 was far from prosperous, owing to overproduction and depressed prices.

In the opinion of Mr. John Laing, chief of the West Virginia Department of Mines, the State's coal output of the year was 54,000,000 long tons, or about 60,500,000 short tons, compared with 61,671,000 short tons in 1910. Some operators estimate that the production of the State will show an increase of about 5 per cent. over that of the preceding year. Mr. Laing estimates that the production of coke in West Virginia in 1911 was not more than half as much as in 1910. This was partly made up, however, by the fact that a large amount of West Virginia coal is being shipped to by-product coke ovens in other States. For several years prior to 1911 the labor supply in West Virginia had not been sufficient for the requirements, but this was not the case in 1911. There were no serious interruptions to business owing to labor troubles, the few instances of disaffection which developed having been settled satisfactorily within a few hours after the strikes began, and the usual complaints of car shortage and the failure on the part of the railroads to handle the traffic were not made. Several attempts have been made to secure agreement among the operators by which prices could be put upon a living basis and ruinous competition abated.

In Alabama, according to conservative estimates, the output in 1911 decreased about 10 per cent. from that of 1910. This has been due chiefly to curtailment of the production of pig-iron, with a proportionate reduction in coke, and to curtailment of the output of coal from the mines of the iron-making companies. The commercial coal business of the State was anything but satisfactory. The demand was less than in 1910, and prices were greatly demoralized. Labor conditions were normal, the supply being sufficient and with-

out interruption because of strikes. Although 1911 was so generally unsatisfactory, provision for better conditions in the future was made by the construction of two large by-product coke-oven plants of Koppers ovens, one operated by the Tennessee Coal, Iron & Railroad Co., the other by the Woodward Iron Co.

The trade conditions in Tennessee were similar to those in Alabama, and the decrease in output was about the same. The principal activity in the way of development in the entire Appalachian region was in Eastern Kentucky, particularly in Pike and Harlan counties. That area will probably show an increased production over 1910.

The coal-mining returns for 1911 indicate that the output of the year was no more, and possibly less, than that of 1910, in spite of the fact that most of the mines in the Mississippi Valley and the Southwestern States were closed down for practically six months during 1910.

In Kansas, Arkansas and Oklahoma competition with fuel oil and with gas continues to be a controlling factor, and the competition of coals from Colorado, Alabama, Kentucky and Illinois was stronger in 1911 than in 1910. The markets for Arkansas and Oklahoma coal have narrowed down to points so close to the producing regions that the freight rates from the mines in other States make up for the cheaper cost of mining in those States. An ameliorating factor, so far as Arkansas is concerned, is that the Arkansas smokeless coal is beginning to expand its market for domestic trade, and in the Northern markets the public is gradually beginning to realize that the Southwestern States produce a high-carbon smokeless coal ranking (especially for domestic use) in grade and quality with that produced in West Virginia. Because of this expansion in the trade for Arkansas smokeless coal, the output of the State increased in 1911 about 10 per cent. over 1910. The operators in Arkansas and Oklahoma make vigorous complaint against the high mining rates which they are compelled to pay. It is claimed that the high cost of mining has so restricted the production that the working time has been reduced to about 50 per cent. of the possible working days during the year, and that the miners are no better off, so far as annual wages are concerned.

Not the least difficulty with which the operators in Arkansas and Oklahoma have to contend is the persistency of the miners in shooting the coal from the solid. This practice, it is claimed, has increased the proportion of low-grade slack coal from 20 per cent. (formerly a large percentage) to 40 per cent., which is now the minimum. Shooting from the solid not only reduces the percentage of salable coal, but by increasing the quantity of fine coal and dust increases the liability to explosions.

To Drain Arkansas Sunken Lands.

One of the most extensive and interesting drainage enterprises so far proposed in the South is that which will reclaim the so-called "sunken lands" of Mississippi county, in Northeastern Arkansas. In this connection Mississippi County Drainage District No. 9 will receive bids until January 25 at Osceola, Ark., for 14,000,000 yards of earth excavation and constructing 17 wooden bridges, concrete spillway, pile and timber spillway, 22 steel bridges, etc., the engineer in charge being the Morgan Engineering Co. of Memphis, Tenn. Referring to this Mississippi county land a dispatch from Memphis says:

"The noted 'sunken lands' are supposed to have been caused by the great earthquake 100 years ago. About 300 square miles are included in the district to be

drained, or almost 200,000 acres of land. At present about one-fourth of this is now available for use. That it is valuable land is apparent from the fact that the land now under cultivation is valued at \$100 to \$200 an acre. Drainage, it is said, will place the greater part of the sunken lands in the same class. The contract, which will be let on January 25, calls for the construction of 300 miles of drainage ditches, 280 miles of which will be dredge ditches varying from 40 to 50 feet in width at the bottom, and 10 feet to 15 feet in depth. The main ditch will be 55 miles in length. The surplus water will be led into the St. Francis and Tyrone rivers. The reclamation of the sunken districts covered by the plans of the Memphis engineers will cost about \$1,500,000. The cost of the work is borne by a bond issue by Drainage District No. 9, under authority of a State law. The bonds will be retired by taxes levied in the district. The same seismic disturbance which sunk the property to be drained created the celebrated Reel Foot Lake."

Kentucky Fuel Co.

Referring to his company's organization, R. L. Brown of Memphis, vice-president of the Kentucky Fuel Co. of Greenville, Ky., wires the MANUFACTURERS RECORD as follows:

"Proposed merger includes properties of Central Coal & Iron Co., W. G. Duncan Coal Co., Gibraltar Coal Mining Co., Broadway Coal Mining Co., Martwick Coal Co., Greenville Coal Co., Powderly Coal Co., Nelson Creek Coal Co. and McHenry Coal Co.; effective January 1; appraised values, about \$3,500,000; last year's production, 1,970,000 tons; 35,000 acres of land; 14 mines." W. G. Duncan of Greenville is president. T. Coleman Du Pont of Wilmington, Del., is interested.

To Develop 10,000 Acres.

The Harlan Coal Co., Board of Trade Building, Louisville, Ky., will develop about 10,000 acres of land up to an annual output of 500,000 tons of coal, and will open machinery bids about March or April. Its equipment, on which bids will be considered, will include conveyor, tipples, electric plant, compressed-air plant, mine cars, steel rails, screens, gasoline motors, copper wire, etc.

Plant to Cost \$100,000.

C. E. Buck of Chattanooga and W. F. Stowers of Gadsden have purchased and will develop iron-ore land near Crudup, Ala. Referring to this development, Mr. Buck wires the MANUFACTURERS RECORD as follows: "Estimated cost of double compartment shaft, including mining machinery, about \$100,000; capacity, 1200 tons daily; property embraces 700 acres."

On Search for Potash.

J. E. Land, De Ridder, La., writes to the MANUFACTURERS RECORD:

"I notice in your issue of December 21 an article on search for potash. We have the green sand, green marl and saline matter, discovered recently while drilling for oil. The hole has been abandoned. I would like to correspond with someone interested."

Machinery for Making Sickles.

Efim Kovalef & Sons, Vladimir Government, Russia, write to the MANUFACTURERS RECORD:

"We are anxious to purchase some machines for making sickles and reaping hooks. Let us know if you can help us to get them. The following are what we need: Machines for bending (curving) sickles; for cutting teeth in them; for polishing and sharpening them; work bench for shaping and finishing the handles; best method of tempering sickles."

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Southern Building in 1911.

Figures from several representative Southern and Southwestern cities indicate that building operations in these sections during 1911 were very active, appreciable increases in the valuation of improvements having been recorded in nearly all localities. Operations in Norfolk have been upon a larger scale than has ever before marked construction in that city, with a steadily-increasing activity. Good records have also been made in Atlanta, Washington and other important cities, reports from which are not now available.

Construction values in Birmingham for the year shows substantial increase over any record ever made in the building industry of the city for a similar period. According to figures compiled by the building inspector of the city, operations will represent a valuation of \$3,651,880, an increase over 1910 of \$187,827. The banner month of the year was November, during which permits were issued for construction estimated to cost \$791,806.

In Richmond the total investment in building operations for the year amounted to more than \$6,000,000. As compared with the total for 1910 these figures show an increase of about \$2,000,000. Indications point to much activity in building during 1912, plans for several large structures already having been prepared.

The annual report of the building inspector of Macon for the year shows an increase in the value of building operations over 1910 of nearly \$2,500,000. Permits were issued in 1911 to the number of 497, as compared with 426 for 1910, while the estimated cost of construction for the year just closed was \$1,256,041, as compared with \$1,038,086 during 1910.

Figures recently compiled indicate that five important cities of the Southwest issued permits for building construction during the first 11 months of the year to the value of \$13,695,722. Of this total the value of operations in Dallas was estimated at \$5,184,422, while Fort Worth has a total of \$2,919,942. Houston has a total of \$2,195,235; San Antonio, \$1,813,174, and Little Rock, \$1,582,949.

The total of operations in Muskogee for the period from June 1 to December 21, inclusive, represents a valuation of \$1,429,577. These figures represent the cost of 252 frame buildings, 49 brick and concrete buildings and 94 miscellaneous structures.

In St. Louis there was a slight decrease in building operations for the year as compared with the preceding year. During 1911 6324 permits were issued for new buildings, involving a cost of construction of \$16,574,482, and 2658 permits for alterations and repairs, involving an expenditure of \$2,033,307, making a total expenditure of \$18,607,555. As compared with 1910 these figures show a decrease in the cost of construction of about \$1,000,000.

A total of 358 permits was issued in Winston-Salem during the year, representing an expenditure of \$664,541. Of the permits issued, 304 were for residences. Operations were most active during May, when permits were issued for construction costing \$157,835.

In Jacksonville a total of 1343 permits was issued during the year, representing an expenditure of \$3,590,805. As compared with the record for 1910 these figures show an increase of \$405,865, and as compared with 1909 an increase of

\$1,280,780. Since the fire of May 3, 1901, which destroyed an estimated total of 2600 buildings and causing a property loss of \$15,000,000, there have been erected in Jacksonville a total of 11,911 structures, having a value of \$32,080,941.

For the first 11 months of 1911 a total of 333 permits was issued in Charlotte, N. C., representing an expenditure of \$1,060,754. These figures show an increase over the entire year of 1910. The feature of operations in Charlotte during the year was the large number of permits issued for business structures, the most important one being the 12-story bank and office building of the Commercial National Bank.

In Louisville a total of 2514 permits was issued during the year, which represents an expenditure of \$6,126,240. The best month of the year was August, during which the cost of construction was estimated at \$1,336,245.

The report of the building inspector of Nashville for the year indicates a slight decrease in operations as compared with 1910. Permits were issued for construction estimated to cost \$1,209,977.20, as compared with \$1,623,598.75 in 1910. Local architects anticipate a better year for building in 1912, and plans are now being prepared for some important structures.

Records of the building inspector of Knoxville show that there was greater activity in building operations in that city during 1911 than in the previous year. A total of 682 permits was issued in 1911, representing an expenditure of \$596,097. These figures show an increase in the cost of construction of \$77,908.50 as compared with 1910.

Figures compiled by the building commissioner of Memphis indicate that the value of operations in that city for the year was \$5,859,346. These figures represent a total of 3213 permits. As compared with the previous year there was a decrease in the value of operations, a total of 3417 permits having been issued in 1910, representing a valuation of \$6,282,533.

Operations in Baltimore were active during the year, permits having been issued for 2393 two-story dwellings, 157 two-story frame dwellings, 95 three-story brick dwellings, seven stores, 95 warehouses, three office buildings and other structures, including 13 apartment-houses. The total cost of construction was estimated at \$8,901,198 for new improvements and \$803,450 for additions.

In Kansas City, Mo., a total of 4576 permits was issued, representing an estimated cost of construction of \$13,310,871. As compared with 1910 these figures show an increase of 939 in the number of permits issued, but a decrease of \$472,325 in value of construction.

Additional Plant Buildings Completed

The Consolidated Furniture Works of Alta Vista, Va., has completed its additional building, of mill construction, 60x152 feet, with galvanized-iron siding and slag roof. This extension makes the company's entire building 60x302 feet, and the new building is divided from the old structure by a fire wall. The annual capacity will be from \$250,000 to \$300,000 worth of furniture.

Supply and Machinery Dealers.

F. D. Mitchell, New York, secretary-treasurer of the American Supply and Machinery Manufacturers' Association, announces that the next triple convention of the American Supply and Machinery Manufacturers' Association, the National Supply and Machinery Dealers' Association and the Southern Supply and Machinery Dealers' Association will be held at Norfolk, Va., May 13-15.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to

SOUTHERN TEXTILE ADDITIONS.

More Than \$6,000,000 Represented in Plans for New Spindles and Looms Announced for Year.

For the fourth quarter of the year announcements were made by the MANUFACTURERS RECORD of three new cotton mills in the South to have 35,050 spindles and 700 looms, and of five mills to be increased by 10,900 spindles and 80 looms in the South. That equipment of machinery, with the necessary buildings and accompanying improvements, requires an investment of about \$875,000 for the new plants and about \$272,500 for the additions to established mills, a total of 45,950 spindles and 780 looms, or an investment of about \$1,147,500 for the months of October, November and December.

The total for the entire year 1911, of mills to be built and enlarged, is 264,890 spindles and 4689 looms, requiring an investment of approximately \$6,622,250 as the result of announcements made during the past 12 months. Most of the manufacturers interested in these enterprises have awarded the contracts for their buildings, equipments of machinery and other requirements. This record for 1911 does not equal that of 1910 by 191,842 spindles, but nevertheless it shows progress during a period when there was considerable depression in the cotton goods markets that resulted in many mills ceasing wholly or in part their production. One feature of the year's textile news was the announcement of the organization of the Parker Cotton Mills Co. of Greenville, S. C., with a capital stock of \$10,000,000 and merging nine companies with about 360,000 spindles and accompanying looms; that capitalization has since been increased to \$15,000,000 and the company now has 18 mills, with 513,168 spindles and 1327 looms. Another merger was the Woodside Cotton Mills Co., Greenville, S. C., capitalized at \$3,000,000 and controlling three mills, with about 137,000 spindles and accompanying looms. A third was the Dillon Mills of Dillon, S. C., capitalized at \$750,000 and controlling 41,680 spindles. Another merger, to be capitalized at \$12,000,000, was projected for South Carolina mills, but this proposition was postponed.

Each issue of the MANUFACTURERS RECORD during 1911 presented statements summarizing the plans of the new companies to build mills and of the established companies deciding to add to their facilities. These reports were prepared from information furnished by managing officials of the various plants in reference. At the end of each quarter year the results were summarized.

The principal announcements of the fourth quarter of 1911 were those outlining the plans of the Thayer Manufacturing Co. of Charlotte for building a 25,000-spindle and 500-loom mill, this being capitalized at \$500,000, and of C. W. Post, the well-known cereal manufacturer of Detroit, to invest about \$400,000 for building a 10,000-spindle and 200-loom mill at Post City, Tex., where he is developing exten-

sive tracts of land, largely for cotton cultivation.

Southern mills continue to progress in the manufacture of the finer grades of cotton cloth, and in the use of electricity for motive power, the latter being made possible by the completion of water-power-electrical plants transmitting electricity at minimum rates and being encouraged by the economical results obtained by those companies which have adopted electric power. The past year's announcements include \$500,000 Thayer mill and \$400,000 Post mill above mentioned; Glenn-Lowry Manufacturing Co., Whitmore, S. C., adding 30,000 spindles and 700 looms at a cost of about \$500,000; the American Net & Twine Co., Anniston, Ala., adding 10,000 spindles at a cost of about \$150,000; Graniteville Manufacturing Co., Graniteville, S. C., adding 5000 spindles; Ivanhoe Manufacturing Co., Smithfield, N. C., adding 6500 spindles; W. S. Gray Cotton Mills, Woodruff, S. C., adding 2400 spindles; Amazon Cotton Mills, Thomasville, N. C., adding 6000 spindles; Exposition Cotton Mills, Atlanta, Ga., adding 10,000 spindles; Flint Manufacturing Co., Gastonia, N. C., adding 2500 spindles; Cuero Cotton Mills, Cuero, Tex., adding 2000 spindles; Grendel Mills, Greenwood, S. C., adding 2000 spindles; Wylie Mills, Chester, S. C., installing 600 looms to enable the company to weave into cloth the cotton yarn, which had been its only product; Buck Creek Cotton Mills, Siluria, Ala., adding 10,000 spindles; Randolph Manufacturing Co., Franklinville, N. C., installing 100 looms; Hadley-Peoples Manufacturing Co., Siler City, N. C., adding 3000 spindles; Greens Manufacturing Co., Greer, S. C., adding 10,000 spindles; Guadalupe Valley Cotton Mills, Cuero, Tex., adding 5000 spindles, etc. Many of the companies have completed their announced improvements, and the others will soon have their new equipments ready for operation.

Among the mills announced previous to

1911 and completed last year were the following: Dunean Mills, Greenville, S. C., capitalized at \$1,000,000, with 50,000 spindles and 1200 looms, for manufacturing India lawns and linens; Dunson Mills, Lagrange, Ga., capitalized at \$500,000, with 20,000 spindles and 500 looms, for manufacturing duck, drills, etc.; Oakland Mills, Newberry, S. C., capitalized at \$500,000, with 20,000 spindles and 500 looms, for manufacturing cloth; Alta Vista Cotton Mills, Alta Vista, Va., capitalized at \$300,000, with 12,500 spindles and 350 looms, for manufacturing fancy cotton goods; Standard Cotton Mills, Knoxville, Tenn., \$175,000 mill of 13,000 spindles for manufacturing yarns for the company's knitting plant; Alice Mills, Easley, S. C., capitalized at \$500,000, with 20,000 spindles and 500 looms, for manufacturing cotton cloth; Albany Cotton Mills, Albany, Ga., capitalized at 250,000, with 10,752 spindles and accompanying looms, for manufacturing cotton cloth; Patterson Mills Co., Roanoke Rapids, N. C., capitalized at \$300,000, with 22,000 spindles and 750 looms, for manufacturing gingham, chevrons, etc.; Moritas Mills, Columbus, Ga., capitalized at \$300,000, with 10,000 spindles and 1 looms, for manufacturing cotton cloth used as the basis of oilcloth; Inverness Mills, Winston-Salem, N. C., capitalized at \$200,000, with 8000 spindles and 200 looms, for manufacturing print cloth; Jennings Cotton Mills, Lumberton, N. C., capitalized at \$300,000, with 8000 spindles, for manufacturing combed and carded and combed American and Egyptian yarns. This foregoing list is an example of how the South is now giving consideration to cloth manufacture, whereas previously it was mainly a producer of cotton yarns. Only two mills in the list are yarn mills, all the others being for cloth manufacture.

The mills reported during October, November and December as to be built and enlarged were as follows:

Florida.			
Name.	Location.	Spindles.	Looms.
Sisal Hemp & Dev. Co.	St. James City.	50
Georgia.			
*Tallapoosa Mills.	Tallapoosa.	2,000
North Carolina.			
Thayer Manufacturing Co.	Charlotte.	25,000	500
*Marion Manufacturing Co.	Marion.
*Ivanhoe Manufacturing Co.	Smithfield.	6,500
South Carolina.			
*Monaghan Mills.	Greenville.	80
*W. S. Gray Cotton Mills.	Woodruff.	2,400
Texas.			
C. W. Post of Detroit.	Post City.	10,000	200
Total for first quarter of year.		59,500	1900
Total for second quarter of year.		86,940	929
Total for third quarter of year.		72,500	1340
Total for fourth quarter of year.		45,950	780
Total for 1911.		264,890	4689
*Established mills enlarging.			

Mason Company Has Contract.

Edwin Howard of Charlotte, Southern agent of the Mason Machine Works of Taunton, Mass., advises that the Mason company will build the 2400 spindles and accompanying machinery to be added by the W. S. Gray Cotton Mills of Woodruff, S. C. In reporting this mill addition last week the machinery contractor mentioned was an error.

Ivey Mill's Additional Machinery.

The Ivey Mill Co. (not Ivey Manufacturing Co.) of Hickory, N. C., will add new machinery, as stated December 28. This new equipment will include 7880 spindles, costing about \$46,000, and it is being furnished by the Mason Machine Works of Taunton, Mass. The Ivey mill has a daily capacity of 7000 yards of cloth, and employs 225 operatives.

The Parker Mills.

The Parker Cotton Mills Co., Greenville, S. C., now controls a total of 18

mills in South Carolina. These are the Olympia, Monaghan, Granby, Victor No. 1 and No. 2, Richland, Greens, Fairfield, Ottray, Wylie, Seneca, Pine Creek, Walhalla, Apalache No. 1 and No. 2, Capitol City, Wallace and Beaver Dam plants, containing 513,168 spindles and 1327 looms.

Textile Notes.

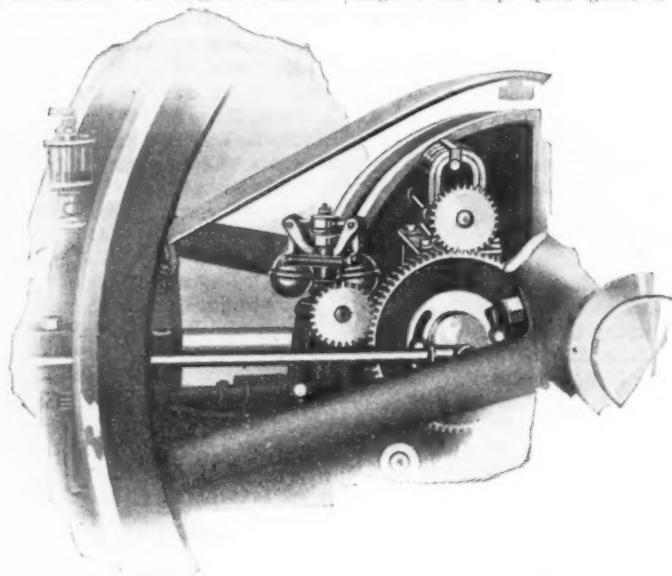
The Davis Hosiery Mills, Chattanooga, Tenn., has completed its additional building, recently under construction. This structure is two stories high, 65x225 feet, and has been equipped for machinery.

The Hannah Picket Mills' additional (four) spinning frames comprise 960 spindles, and the company now has 16,000 spindles and 400 40-inch looms. This Rockingham (N. C.) company was mentioned last week as having awarded contract for the new machinery.

MECHANICAL

Important Improvement in Foos Gas Engines.

A radical step has been taken in the design of Foos horizontal 3 to 90-horse-power gas, oil and gasoline engines by the incorporation of a "built-in" magneto and the Foos wipe spark igniter, as shown in the illustration. This magneto eliminates



"BUILT-IN" MAGNETO AND IGNITER ON FOOS ENGINE.

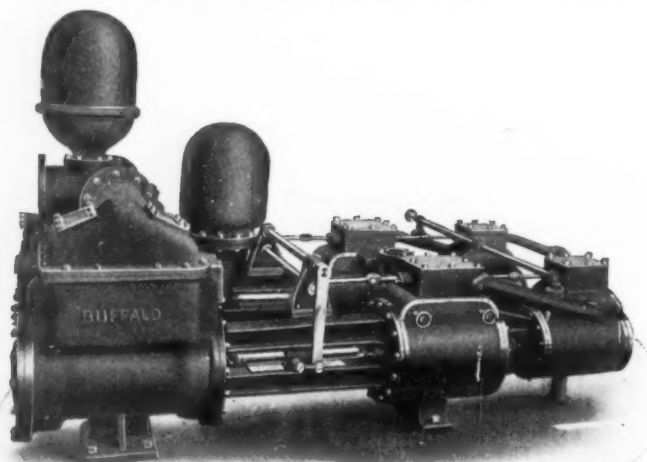
the need for batteries and the use of belts, sprocket chains, rubbing discs, etc., which are required with detached magnetos. Experience has indicated that a magneto efficient electrically and mechanically involved a structural design that would make it a part of the engine; a low voltage, so that it could be used on "make-and-break" igniters without causing the electrodes to deteriorate; a slow speed to obtain mechanical durability; a positive geared drive, and an electrical efficiency which would produce a spark in turning a big engine slowly by hand. The Foos Gas Engine Co. of Springfield, O., has incorporated all these requirements in this new design, and claims that the success

This magneto produces an alternating current, and therefore produces two "peaks" for each revolution of the armature. During the rest of the revolution the current is too weak to produce a spark. The relative position of these two "peaks" is fixed and synchronized by driving the magneto positively and setting the armature in proper relation to the engine. The confidence of the company in this new magneto and wipe spark igniter is indi-

cated by the large number of engines that have been shipped out without batteries.

Pumping Machinery for Sugar Plantations.

Particular attention is given to the design of pumps for plantation pumping operations by the Buffalo Steam Pump Co., Buffalo. It has added several important features in the manufacture of these pumps, as exemplified in the two large Buffalo compound twin end tank pumps recently completed for Melchior, Armstrong & Dessan of New York for use on a large sugar plantation in Porto Rico. These pumps are fitted with Buffalo single independent air pumps and jet condensers,



BUFFALO PUMP FOR SUGAR PLANTATION USE.

obtained by its use shows that full reliance may be placed in the new magneto and Foos wipe spark igniter. The magneto is noteworthy on account of the size and number of its magnets. They are made from Tungsten steel, and consist of a set of six, each magnet being securely bolted to the pole pieces. The armature is laminated, consisting of many pieces of soft sheet iron. The armature housing is strong and rigid. Precautions are taken to make the armature coil oil and moisture proof.

as shown in the accompanying illustration. The diameter of the high pressure steam cylinders is 14 inches, and that of the low pressure 20 inches. Each water piston is 18 inches in diameter, and has an 18-inch stroke. The total head to be pumped against is 115 feet, and each pump is to deliver 3,000,000 gallons per day. The diameter of the discharge pipe is 12 inches.

Several features specially worked out for this sugar plantation service are worthy of note. The steam cylinders are

lined with Russia iron lagging, with brass bands and magnesia insulation arranged for convenient removal when worn. The water cylinders have bronze liners. Air chambers are furnished for the suction of each main pumping engine. The pistons of the pumps are furnished with springs to make packing adjustable, and the followers on the pistons are so made that they can be removed without taking off the piston-rod nuts.

Single-Motor Self-Propelling Crane.

The accompanying illustration shows a self-propelling single-motor railroad crane which is designed as a simple, economical and efficient machine for the lighter operations required of this class of machinery. It is particularly useful in the equipment of factories and plants where very heavy cranes and hoisting apparatus would be cumbersome. The machine is the Browning Engineering Co.'s standard No. 4 four-wheel locomotive crane manufactured by the Browning Engineering Co., Cleveland. This particular machine was supplied to the Wisconsin Coal & Dock Co. for use in loading coal from storage piles to cars in its yards at Superior. It is operated as a crane and is propelled by a motor which is controlled by one man. It has a maximum lifting capacity of 15



BROWNING ENGINEERING CO.'S SELF-PROPELLING CRANE.

tons at a 10-foot radius, and 2½ tons at a 40-foot radius. The working weight is approximately 35 tons. The draw-bar pull of this machine is about 7600 pounds, which enables it to handle six or seven cars on a level track.

The motor is a Westinghouse direct-current type MT No. 2, built especially for crane service by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. It has a heavy frame horizontally split, so that all the parts are easily accessible. The shafts are extra large and strong, and the area of the commutating service is ample for good commutation. The current density in the brushes is low. High starting torque and low flywheel effect permit the quick starting, stopping and reversing required by this kind of service. The motor shown is rated at 50 horse-power, 220 volts and 470 revolutions per minute. Standard reversing drum-type Westinghouse controller and g it resistors are used for controlling the motor.

THE POTASH DISPUTE.

A Statement by the International Agricultural Corporation.

A final settlement of the "potash controversy" has been announced by the International Agricultural Corporation in the following authorized statement:

"The only foundation for previous reports that the potash difficulty had been settled was that a basis of compromise was agreed to, provided a number of important matters, involving the interests and demands of the International, the Potash Syndicate and the American buyers, could be adjusted.

"Such adjustments have now been made and confirmed by exchange of cables with Berlin. These adjustments provide for the withdrawal of all suits in our courts involving liability for payment of the potash tax levied by Germany; for the assignment to the syndicate of American contracts with the independent mines; for new contracts with the syndicate covering full American potash requirements on a price basis practically the same as that prevailing before the low-price contracts were obtained from the independent mines, and for the re-entry of the independent mines into the syndicate.

"As the owner of the Sollstedt mine, the International Agricultural Corporation has exhausted every possible means to protect its low-price contracts with American consumers. The corporation and those who shared with it the difficulties of its position have agreed to the present settlement because, after the Americans who held contracts with the Sollstedt and

Aschersleben mines negotiated the later Hamburg contracts with the syndicate, it became impossible for the United States Government to obtain any relief for American consumers.

"It is to be regretted that Americans failed to accept a former compromise obtained for them by the International, the terms of which were far more favorable than those now agreed to. Too much blame, however, should not be imposed for these failures, for the reason that the Americans could not believe at that time that the energetic efforts of their Government would be ineffective to protect contracts against the operation of the retroactive German tax law."

To Drain Delta Lands.

The Mary Mac Plantation Co., now developing extensive tracts of land in the Mississippi Delta on the Yazoo & Mississippi Valley Railroad, 30 miles south of Memphis, will drain its low swampy lands. It will expend about \$50,000 for this purpose, and the improvement calls for the construction of about 70 miles of ditches, three feet wide at the bottom and about four feet deep. Contracts for these ditches have been awarded by the Morgan Engineering Co. of Memphis to the Lowrance Bros. Company of Memphis and the Lewis Engineering & Construction Co. of Knoxville.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following explanations:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

BRIDGES, CULVERTS, VIADUCTS

Fla., Jacksonville.—Duval county will construct concrete bridge over Trout Creek on Lem Turner Rd. Address County Commissioners.

Ark., Imboden.—Randolph County Commissioners awarded contract to construction company of Vincennes, Ind., at \$35,000 to construct steel bridge across Eleven Points River at Birdell.

Ga., Dublin.—Laurens county will vote January 9 on \$350,000 bond issue to construct bridges, roads and school; H. C. Burch, chairman Board of Commissioners.

La., Vivian.—Railroad company to be organized will construct two small bridges across Black Bayou in connection with construction of 36 miles of railroad from Red River to Jefferson, Tex., via Vivian; T. E. Bird, secretary Vivian Progressive League, may be addressed.

Md., Baltimore.—Baltimore Bridge Co., Bush and Wicomico Sts., Baltimore, is probably lowest bidder at \$2750 for wrecking bridge, and at \$15,000 for steel work on new structure to be built over tracks of Baltimore & Ohio Railroad at Monroe St.; H. K. McKay, City Engineer. (Call for bids lately noted.)

Mo., Jefferson City.—City voted \$70,000 bond issue for construction of viaduct over Goose Creek, etc. Address The Mayor. (See "Sewer Construction.")

N. C., Wilmington.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer,

will construct concrete bridge. (See "Railway Stations.")

N. C., Wilmington.—Tidewater Power Co., A. B. Skelding, general manager, will construct concrete bridge across Bank's Channel. (See "Electric Plants.")

Okla., Enid.—Garfield County Commissioners are considering construction of concrete bridges along 30 miles of Chisolm Trail highway; proposed to build about 12 bridges at cost of \$1200 each.

Tenn., Gallatin.—Nashville-Gallatin Interurban Railway will construct iron and concrete bridge.

Tenn., Memphis.—Arkansas & Memphis Railroad Bridge & Terminal Co. plans to construct railroad bridge. (See "Railway Shops, Terminals, Roundhouses, etc.")

Tenn., Rock Island.—Warren and White counties awarded contract at about \$15,000 for erection of bridge across Caney Fork River; 565 feet long. Address Warren County Commissioners at McMinnville, Tenn., or White County Commissioners at Sparta, Tenn.

Tex., Franklin.—Robertson county will vote January 20 on \$25,000 bond issue for bridge purposes. Address County Commissioners. (Recently mentioned.)

Tex., Houston.—City awarded contract to Gulf Concrete Construction Co. of Houston at \$17,200 to construct reinforced concrete bridge over White Oak Bayou, and at \$6785 to construct reinforced concrete bridge over branch of White Oak Bayou; F. L. Dormant, City Engineer. (Recently mentioned.)

Tex., Houston.—Trinity Valley & Northern Railway Co., A. J. Wise, chief engineer, Houston, will construct nine wooden trestles.

CANNING AND PACKING PLANTS

Ala., Elberta, P. O. at Swift.—German-American Alliance is promoting establishment of cannery.

Fla., Clyatt, P. O. at Micanopy.—Florida Consolidated Canning Co., Fred S. Gray, general manager, Jacksonville, will establish cannery at Clyatt.

Ga., Macon.—Georgia Packing & Stock Yards Co. will be organized with minimum capital stock of \$100,000 and privilege of increasing to \$1,000,000 to establish packing plant; E. W. Gould (president Georgia Packing Co.), W. P. Stevens, L. S. Dure, A. J. Long and others are interested. (Lately mentioned.)

La., Donaldsonville.—St. Elmo Canning Co. incorporated with \$38,000 capital stock; Edwin P. Brady, president and treasurer; George A. Simms, vice-president and secretary.

La., Ponchatoula.—Company is being organized to establish plant for canning cane syrup; proposed to operate plant in connection with Ponchatoula Ice & Electric Co.'s plant.

Miss., Wiggins.—American Pickle & Canning Co., Fleming Bldg., Des Moines, Ia., P. H. Roberts of Wiggins, manager, is proceeding with construction of previously-noted plant, and will open machinery bids January 15; manufacture canned goods, catsup, pickles and condiments; capacity, 50,000 cases per month. (See "Machinery Wanted.")

Mo., St. Louis.—Gerst Bros. Meat Co., 3523 Lucky St., will erect two-story brick building to be equipped as packing plant; will install cooler; structure will also contain offices; cost about \$15,000; present building will be used as packing plant only.

Tenn., Memphis.—William Dunn and E. L. Sherrick are promoting organization of company with \$250,000 to \$300,000 capital stock to establish packing plant.

Va., Dillwyn.—Dillwyn Ice, Light & Preserving Co. (James S. Steele) has building and will establish canning and preserving plant and five-ton ice plant; later contemplates installing electric-light plant; no bids asked; capital stock \$5000. (Recently noted.)

Va., Suffolk.—Virginia Packing Co. will establish cannery.

CLAYWORKING PLANTS

Fla., Tampa.—Bricks.—Enamel Vitriol Brick Co., Nicholas Bldg., Toledo, O., advises Manufacturers Record that its "proposition for a brick plant at Tampa has not yet matured."

Ga., Macon.—Bricks.—Hall Brick Co. incorporated with \$40,000 capital stock by Jesse H. Hall, J. E. Hall and A. B. Domingos.

Ga., Waycross.—Bricks, etc.—Rainwater

Bros. will establish plant to manufacture tile for mantels and fancy interior work and brick.

COAL MINES AND COKE OVENS

Ky., Artemus.—Anchor Coal Co. leased coal land from A. J. Croley & Son of Barbourville, Ky.; will develop; now planning to open mine and install equipment.

Ky., Greenville.—R. L. Brown of Memphis, Tenn., vice-president of Kentucky Fuel Co., wires Manufacturers Record: "Proposed merger includes properties of Central Coal & Iron Co., G. W. Duncan Coal Co., Gibraltar Coal Mining Co., Broadway Coal Mining Co., Martwick Coal Co., Greenville Coal Co., Powderly Coal Co. and Nelson Creek Coal Co.; to become effective January 1; appraised values about \$3,500,000; last year's production 1,970,000 tons; 35,000 acres land; 14 mines."

Kentucky.—Harlan Coal Co., Board of Trade Bldg., Louisville, Ky. (recently noted under Caston, Ky.), advises Manufacturers Record that company is not yet fully organized; will open bids on mining machinery about March or April; no coke ovens; estimated output up to 500,000 tons annually; acreage about 10,000. (See "Machinery Wanted.")

Tex., Texas City.—State Lumber & Coal Co. incorporated by F. J. Marrett and others. (See "Lumber Manufacturing.")

CONCRETE AND CEMENT PLANTS

Ga., Savannah.—Concrete.—Standard Concrete Co., Poughkeepsie, N. Y., is considering, it is reported, establishment of concrete plant.

COTTON COMPRESSES AND GINS

Ga., Columbus.—Lummis Cotton Gin Co. will expend about \$25,000 to improve cotton gin; erecting metal-working shop; two stories; brick; mill construction.

Ga., Milledgeville.—C. I. Hall will rebuild ginney reported burned at loss of \$4500.

Ga., Schlatterville (not a postoffice).—R. H. Rawls, R. F. D. No. 2 from Waycross, Ga., contemplates rebuilding cotton gin recently burned; cost \$5000.

Miss., Woodville.—Woodville Gin & Mill Co. incorporated by D. C. Bramlette, W. F. Tucker and others.

COTTONSEED-OIL MILLS

La., Vidalia.—Concordia Oil Mill Co. will not increase capacity of oil mill; will erect addition to ice plant, increasing capacity from 20 to 40 tons per 24 hours; equipment reported purchased. (Recently noted.)

S. C., Timmonsville.—Timmons Oil Co., J. E. Patterson, manager, will rebuild seed-house and office; seedhouse 150x60 feet; will purchase machinery in open market; operation in 30 to 40 days. (Recently reported burned.)

Tex., Teague.—E. E. Tucker purchased site through Foster & Earrington on which to erect cottonseed-oil mill.

DRAINAGE AND IRRIGATION

Ark., Little Rock.—Pulaski county will construct 300,000 cubic yards river-protection levee along Arkansas River and Fourche Bayou; bids received until January 30; Lund & Hill, engineers, Little Rock; William M. Kavanaugh, president Drainage District Commissioners. (See "Machinery Wanted.")

Ark., Stuttgart.—Stuttgart-Kings Bayou Drainage District No. 6 awarded contract to Pollard-Campbell Dredge Co., Omaha, Neb., for 450,000 cubic yards dredge work, and to E. J. Hahn, Little Rock, Ark., for 40,000 cubic yards team excavation; Roy N. Towl, consulting engineer. (Recently mentioned.)

La., Kenner.—Julius P. Funk, Bloomington, Ill., purchased controlling interest in Fairview Plantation, and will organize \$100,000 company to take over property, prepare for cultivation and divide into small tracts for sale to farmers.

La., New Orleans.—Alluvial City Land Co. incorporated with \$165,000 capital stock; Eugene L. Chappuis, president; Purnell M. Milner, vice-president; William H. Heyl, treasurer.

Okla., Chandler.—Lincoln County Commissioners awarded contract to Sprinkle Company, Fort Wayne, Ind., at about \$500,000 to construct canals for drainage of 42 miles of swamp land in Drainage District No. 1; about 7,327,447 cubic yards excava-

tion; H. J. Wilkins, district engineer, Oklahoma City, Okla. (Call for bids lately noted.)

Tenn., Memphis.—Morgan Engineering Co. awarded contract to Lowrance Bros., levee contractors, Memphis, and Lewis Engineering & Construction Co., Knoxville, Tenn., for construction of about 70 miles of drainage canals on Mary Mac plantation, 30 miles south of Memphis; lateral ditches will be three feet wide at bottom and four feet deep; cost about \$50,000.

Tex., Austin.—Del Valle Irrigation & Milling Co., Littlefield Bldg., will construct reinforced concrete dam, about nine miles from Austin, to irrigate 10,000 acres of land; dam 9 feet high and 324 feet long; impound 116,000,000 gallons of water; generate electricity for manufacturing and power for six large gins; D. B. Matthews, president; Godwin Jones, vice-president; Charles Jones, secretary; Roger Robedau, treasurer; T. U. Taylor, dean of engineering faculty of University of Texas, is engineer in charge. (Recently noted incorporated with \$20,000 capital stock.)

Texas.—Contract for construction of earth dam across Long Hollow Canyon (branch of Medina River) let to J. B. Kelly & Son; irrigate about 1000 acres; C. S. Young Company, San Antonio, Tex., engineer in charge.

Tex., Bay City.—Markham Drainage District (District No. 2 of Matagorda county) will vote in January on issuance of \$234,990.13 of bonds for construction of drainage system.

Tex., Del Rio.—D. B. Chapin of Brownsville, Tex., is preparing to have preliminary surveys made by C. S. Young Company, San Antonio, Tex., for previously-noted irrigation enterprise; 25-mile canal proposed, 2½ miles of this to be tunnel through Devil's River-Sycamore Creek divide.

Tex., Plainview.—Messrs. F. N. Simmons, R. R. McCutchen, W. J. Riddell and B. F. Kaufman of Des Moines, Ia., will develop 18,000 acres of land near Plainview; subdivide into 40-acre tracts and develop townsite; is installing demonstration well, which guarantees 2000 gallons of water per minute from 14-inch well; will use electric central power plant or individual system; install gas engines or crude-oil engines at each well, using centrifugal pump. For further details address R. R. McCutchen, 210 5th St., Des Moines, Ia. (Recently noted to have purchased land for \$500,000, etc.)

ELECTRIC PLANTS

Ala., Cordova.—Cordova Light & Power Co. applied for franchise to furnish electricity; J. M. Miller, G. S. Elliott and E. T. Hendon are interested.

Ark., Osceola.—Light Commissioners (W. J. Lamb, J. L. Ward and C. L. Moore) have arranged with Abner Driver, owner of local electric-light plant, to acquire plant; will erect power plant and install equipment; use old plant for auxiliary purposes.

Ga., Washington.—City rejected bids for construction of power plant and improvement and extension of electric light and power transmission system; will receive new bids until January 20; plans by Westinghouse, Church, Kerr & Co., engineers, New York; Boyce Ficklen, Jr., City Clerk. (Recently mentioned. See "Machinery Wanted.")

Ky., Island.—City is considering, it is reported, construction of electric street-lighting system; electricity to be furnished by Memphis Mining Co.'s plant, about one-half mile from city.

La., Donaldsonville.—City engaged G. U. Borde, New Orleans, La., as engineer to prepare plans and specifications and do engineering work in connection with improvements to electric-light plant and waterworks; Charles Maurin, Mayor. (Recently stated to install engines in power-house at cost of \$30,000.)

La., Mitchellville.—City will vote January 9 on granting franchise to George T. Gibson to install electric-light plant. Address The Mayor.

Mo., Lincoln.—W. C. Cain will, it is reported, construct electric-light plant.

Mo., Trenton.—Trenton Gas & Electric Co. incorporated with \$50,000 capital stock by J. T. Menefee, Clarence O. Daniel and Jasper C. Young.

Mo., Skidmore.—Maryville Light & Power Co., Maryville, Mo., submitted proposition to furnish electricity to Skidmore; 14-mile transmission line; cost about \$8000.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

N. C., Wilmington.—Tidewater Power Co., A. R. Skelding, general manager, will make various improvements costing about \$125,000, including doubling capacity of power plant, concrete bridge across Bank's Channel and double track to Winter Park; ordered 2000-kilowatt turbine for power-house; concrete bridge will be built under supervision of Furgeson & Ward of Key West, Fla., according to plans prepared by Henry Torrance, Jr., 50 Church St., New York; company also plans to fill in 3500 feet under long trestle extending across sound, and proposes to reclaim land on south side of beach by filling in; will build dredge to be operated by electricity.

Okl., Harmon.—City voted \$3500 of bonds for electric-light plant; construction bids received January 11; Western Engineering Co., consulting engineer, Oklahoma City, Okla. (See "Machinery Wanted.")

S. C., Springfield.—Springfield Electric Light & Power Co. incorporated with \$20,000 capital stock; J. McR. Bean, president; Mike Gleason, vice-president; J. B. Smith, secretary-treasurer.

Tenn., Columbia.—Company will be organized to furnish electric-light and water; Granbery Jackson, Nashville, Tenn., will examine and report on condition of electric-light plant and water-works of Columbia Water & Light Co.

Tenn., Woodbury.—City is considering construction of electric-light plant. Address The Mayor.

Tex., Baird.—Baird Light & Ice Co. incorporated with \$20,000 capital stock by P. A. Hooger, W. W. Wedeborn and E. M. Smith.

Tex., Beeville.—Beeville Manufacturing Co. increased capital stock to \$100,000.

Tex., Mineola.—Mineola Light & Ice Co., C. M. Dozin, manager, has placed order for additional equipment (recently noted) exclusive of motors and two transformers; cost of improvements, \$8000. (See "Machinery Wanted.")

Tex., Sinton.—Sinton Ice & Light Co. has organized with L. Fouts president, G. H. Ferguson vice-president and manager, R. N. Hodge secretary; awarded contract to Martin Wright of San Antonio, Tex., to erect building; cost of machinery (purchased), \$10,000; daily capacity, 1500 lights and 10 tons of ice. (Recently noted incorporated with \$10,000 capital stock.)

Tex., Sinton.—Sinton Ice & Light Co. purchased local light and ice plant; will improve and operate; L. Fouts, president, San Antonio, Tex. (See "Ice and Cold-storage Plants.")

Va., Dillwyn.—Dillwyn Ice, Light & Preserving Co. (James S. Steele) contemplates installing electric-light plant. (See "Canning and Packing Plants.")

W. Va., Kimball.—Kimball Light, Power & Water Co., Conover Bldg., Dayton, Ohio, will make improvements to electric-light plant and water-works; erect necessary power buildings, etc.; cost \$50,000; J. G. Russell Company, Conover Bldg., Dayton, O., recently noted to have acquired franchise for electric-light plant and water-works. (See "Water-works.")

FERTILIZER FACTORIES

Md., Baltimore.—D. B. Martin Company, Union Abattoir, Wilkens Ave., will rebuild fertilizer plant, burned at probable loss of \$100,000.

S. C., Orangeburg.—Orangeburg Fertilizer Co. increased capital stock from \$10,000 to \$60,000.

FLOUR, FEED AND MEAL MILLS

N. C., Stony Point.—Pearl Milling Co., R. S. Moore, secretary-treasurer, will erect roller mill; 20x50 feet; frame; machinery reported purchased, exclusive of power equipment; daily capacity 60 barrels of flour. (See "Machinery Wanted.")

FOUNDRY AND MACHINE PLANTS

Ga., Atlanta.—Cotton Compresses.—Farmers' Gin Compress & Cotton Co., Harvey Jordan, president, will increase capital stock from \$1,000,000 to \$5,000,000, and proposes establishing plant to manufacture cotton compresses for use at gins.

Ky., Lebanon.—Lebanon Light, Ice & Power Co. will build ice plant; capacity, 15 tons daily; cost \$18,000 to \$20,000; contract awarded to Cincinnati (O.) company.

Mo., Kansas City.—Machinery.—Miller-Sandy Machinery Co. incorporated with \$10,000 capital stock by M. E. Miller, Seth S. Sandy and James H. McVay.

Tex., Galveston.—Boilers.—John J. Kane purchased site on which it is proposed to erect addition to boiler works.

Tex., Waco.—Plows.—Thompson-Breece Company, Wapakoneta, O., contemplates establishing auto-plow factory.

GAS AND OIL DEVELOPMENTS

Ark., Stamps.—Experiment Farm & Oil Co. incorporated with \$25,000 capital stock by George F. Jasper, W. H. Wellknecht, W. H. Reynor, J. B. P. Smith and others.

La., Vivian.—James Bayou Oil & Development Co. incorporated with \$10,000 capital stock; A. L. Burke, president; Ira T. Smith, vice-president; N. S. Smith, secretary.

La., Vivian.—Hub Oil Co. incorporated with \$30,000 capital stock; J. L. Clarkson, president; E. Wayles Browne, vice-president; P. M. Williams, secretary-treasurer.

Okl., Atoka.—Boggy Oil Co. incorporated with \$10,000 capital stock by O. C. Elkins, Stringtown, Okla.; N. W. Willett and T. R. Hall, Thurber, Okla.

Okl., Tulsa.—Arkansas Oil Co. incorporated with \$3000 capital stock by David Shipman, James R. League, Luther Miller, E. H. Brady and others.

Tex., Beaumont.—Nineteen Oil Co. incorporated with \$3000 capital stock by W. M. D. Lee, Erastus Hill and J. A. Moor.

Tex., Houston.—Investors' Land & Oil Co. incorporated with \$10,000 capital stock by Harry S. Gerson, H. S. Weary, Dave S. Fridner and others.

W. Va., Sistersville.—Chase Oil & Gas Co. incorporated with \$10,000 capital stock by Joseph McKay, Mary C. McKay, C. A. McKay, J. J. McKay and Mabel G. McKay.

ICE AND COLD-STORAGE PLANTS

Ala., Montgomery.—Abraham Bros. awarded contract to C. B. Ratliff, Montgomery, to erect building to be occupied by National Packing Co.; two stories and basement; cost \$11,000; plans by Fred Ausfield, Montgomery. (Recently noted.)

Ga., Greensboro.—Mr. Austin of Detroit, Mich., representing N. O. Nelson of St. Louis, Mo., is promoting organization of company to establish ice plant and milk and cream depot; will consolidate with Greensboro Milk & Cream Co.; main offices at Atlanta, Ga.

La., Vidalia.—Concordia Oil Mill Co. will increase capacity of ice plant from 20 to 40 tons per 24 hours; machinery purchased. (See "Cottonseed-oil Mills.")

S. C., Greenwood.—Greenwood Ice & Coal Co. will increase capacity of ice plant from 25 to 50 tons; cost of machinery and improvements to building about \$20,000; C. E. Wilkinson has contract for construction; Ira Shover, superintendent in charge of mechanical improvements.

Tex., Baird.—Baird Light & Ice Co. incorporated by P. A. Hooger and others. (See "Electric Plants.")

Tex., Cotulla.—W. J. Garing, representing Germania Refrigerator & Machinery Co., San Antonio, Tex., is promoting organization of company to establish ice plant.

Tex., Sinton.—Sinton Ice & Light Co., G. H. Ferguson, manager, awarded contract to erect building and for machinery for electric light and ice plant; recently noted incorporated with \$10,000 capital stock. (See "Electric-light Plants.")

Tex., Sinton.—Sinton Ice & Light Co. purchased local ice and light plant; will improve and operate; purchased dynamo and wiring; L. Fouts, president, San Antonio, Tex.; R. N. Hodge, secretary, San Antonio; G. H. Ferguson, vice-president and general manager, Leesville, La. (Recently reported incorporated with \$10,000 capital stock.)

Tex., Yoakum.—Creamery Dairy Co., San Antonio, Tex., will erect 20-ton ice factory.

Va., Dillwyn.—Dillwyn Ice, Light & Preserving Co. (James S. Steele) has building and will establish five-ton ice plant, etc. (See "Canning and Packing Plants.")

IRON AND STEEL PLANTS

Ga., Atlanta.—Steel Plant.—Atlanta Steel Co. will invest \$200,000 to double size and capacity of plant; will construct another furnace and provide for extensive enlargements; determine details during January.

Tenn., Nashville.—Iron and Steel Plant.—W. J. Miles, Jr., of W. J. Miles, Jr., & Son (manufacturers of flexible and non-flexible broaches) plans to establish iron and steel works; is progressing with arrangements; details not determined. (Lately reported.)

LAND DEVELOPMENTS

Ala., Andalusia.—Morris Land Co. incorporated with \$8000 capital stock by A. B. Darling of Andalusia, J. R. McLean of Pen-

sacola, Fla., and D. H. Morris of Geneva, Ala.

Ark., Jonesboro.—Lamb-Baker Company incorporated with W. C. Baker, D. E. Lamb and A. M. Hilliard.

Ga., Elmore.—Pierce Crockett has purchased Beech Grove plantation, consisting of 6000 acres; will subdivide and develop for farming purposes.

Ky., Lexington.—James B. Haggin purchased 310-acre farm and will develop suburban residential suburb; 5 and 10-acre tracts.

Ky., Nortonville.—N. K. George, Joe and Hugh Toy, Anthoston (R. F. D. from Henderson), Ky., purchased 1300 acres in Hopkins county; will, it is reported, improve, divide into smaller tracts and sell.

Md., Frederick.—Frederick Realty Co. incorporated with \$3000 capital stock by S. Elmer Brown, George E. Wilcox and O. C. Wareline; purchased property at 5th and Elm Sts.; will improve and erect dwellings. (See "Dwellings.")

N. C., West End.—Molenburg Farm Co. incorporated with \$125,000 capital stock by R. J. W. O. and F. A. Cochran, all of Charlotte, N. C.

N. C., Wilmington.—Fidelity Investment & Development Co., D. N. Chadwick, Jr., president, secured option on 322 acres land near Wilmington; will divide into 200 lots; W. C. Carlinhour is vice-president and E. A. Chanaberry secretary.

S. C., Charleston.—Byrd Land Co. incorporated with D. E. Thrower, president; T. T. Hyde, Jr., secretary-treasurer.

S. C., Gaffney.—Whig Hill Land Co. incorporated with \$10,000 capital stock by J. A. Carroll, C. A. Jeffaries and J. Ebb Jeffaries.

Tex., Austin.—City will vote about February 1 on probable \$500,000 bond issue for purchase of cemetery tract, etc. Address The Mayor. (See "Road and Street Work.")

Tex., Beaumont.—City voted \$60,000 bond issue for park purposes. Address The Mayor. (Recently mentioned.)

Tex., Falfurrias.—Cornell-Miller Texas Farms Co. organized with Robert H. Cornell president and Garland B. Miller vice-president and treasurer, both of St. Louis, Mo.; controls 62,000 acres in Southwestern Texas and will develop; property is portion of 400,000-acre ranch; plans to select 10,000 acres in center of tract and improve with streets and roads, construct electric-light system, artificial lake, bath and boat houses, garage and clubhouse.

Tex., La Porte.—Bay Shore Homesite Co. purchased 663 acres near La Porte and will develop. (Company was recently reported incorporated under Houston, Tex., with \$65,000 capital stock by John D. Larking and others of Houston.)

Tex., Plainview.—R. R. McCutchen, 210 5th St., Des Moines, Ia., may be addressed for further details relative to development of 18,000 acres of land near Plainview; Mr. McCutchen and others recently noted to have purchased land, etc. (See "Drainage and Irrigation Systems.")

Va., Lynchburg.—Lynch Development Co. incorporated with \$1,000,000 capital stock by E. V. Lynch, G. E. Martin, E. B. Hardesty, J. L. Morris and G. C. Irvine.

Va., Martinsville.—Martinsville Land & Improvement Co. incorporated with \$25,000 capital stock; T. G. Burch, president; J. D. Hodges, vice-president; B. S. Davis, secretary-treasurer.

Va., Norfolk.—G. & G. Corporation incorporated with \$15,000 capital stock; Hugh C. Davis, president; L. D. Starke, vice-president; H. W. Davis, secretary-treasurer.

Va., Norfolk.—Abbey Land Co. incorporated with \$20,000 capital stock; John A. Lesner, president; M. T. Friary, vice-president; H. T. Cruser, Jr., secretary-treasurer.

Va., Salem.—Roanoke Valley Orchard Co. incorporated with J. H. Hungerford president, John E. Walker vice-president and general manager; owns 10,000 acres of land in Valley of Virginia; will divide into 10-acre tracts and plant apples; main office, 11th floor Union Bank Bldg., Pittsburgh, Pa. (J. H. Hungerford and others previously noted to have purchased land.)

W. Va., Rada.—Chert Mountain Orchards Co. incorporated with \$75,000 capital stock by E. A. Leatherman, Rada; George T. Leatherman, A. R. Leatherman, O. A. Leatherman and G. K. Leatherman, all of Old Fields, W. Va.

LUMBER MANUFACTURING

Ala., Marlow.—F. L. Brown will build sawmill at his brick and pottery plant.

Ala., Mobile.—Mobile Stave Co., Box 345,

will install mill to cut gum logs into five-inch ditches; has not purchased machinery.

Ga., Lagrange.—Pike Bros. Lumber Co. will erect brick building costing \$10,000; machinery in present building will be installed in new structure; present buildings used for storage and warehouse purposes.

Ga., Newton.—J. M. Tomlinson, Cordele, Ga.; P. G. Willingham and B. P. O'Neal, Macon, Ga., purchased 10,000 acres of timber land in Baker county for \$100,000; reported to organize company and utilize timber for turpentine and sawmill purposes.

La., Hammond.—Hammond Lumber Co. will install additional sawmill and planing-mill machinery and drykilns; daily capacity 100,000 feet of yellow-pine lumber. (See "Machinery Wanted.")

La., Livingston.—McCarroll Lumber Co., James F. McCarroll, president, Hammond, La., purchased timber land for \$20,000; timber will probably be cut at sawmill at Holden, La.

N. C., Southmont.—C. M. and G. W. Wall, Wallburg, N. C., purchased 210 acres of timber land for \$4500 and will install saw, shingle, planing mills and box factory; have let contracts for machinery, etc.

S. C., Charleston.—Cooper River Corporation incorporated with \$100,000 capital stock by Henry Bulst and Samuel S. Bulst.

Tex., Dallas.—Western Lumber & Creosoting Co. incorporated with \$50,000 capital stock by J. J. Marshall, R. W. Yarbrough and A. L. Burke.

Tex., Sabine County.—S. H. Knox, Livingston, Tex., will build sawmill in Sabine county, where he owns about 500,000,000 feet long-leaf pine timber.

Tex., Texas City.—State Lumber & Coal Co. incorporated with \$15,000 capital stock by F. J. Marrett, J. M. Proctor and J. Stanley Carothers.

Va., Bristol.—Wise-Scott Corporation incorporated with \$50,000 capital stock; H. H. Kaylor, president, Bristol; P. J. McCullen, vice-president, secretary and treasurer, Rochester, Va.

W. Va., Randolph County.—Robert F. Waltemer, Franklin Bank Bldg., Philadelphia, Pa., purchased 10,000 acres timber land (mineral rights reserved) as reported in December; he advises he is not now prepared to make any statement.

METAL-WORKING PLANTS

Tex., Dallas.—Tanks, etc.—Atlas Metal Works, Millard Storey, manager, 1301 Young St., will erect building; 75x250 feet; fire-proof; date of opening bids not set; install machinery to manufacture sheet-metal work, tanks, culverts, fire escapes, etc. (Recently noted to increase capital stock to \$50,000.)

Tex., Houston.—Corrugating.—Tennison Bros. purchased sites 100x125 feet on which to establish corrugating and sheet-iron works; erect four-story building; machinery ordered, including equipment for manufacturing metal shingles, piping, tanks, etc., and four machines for corrugating galvanized iron sheets for roofing and similar purposes; contemplates increasing capital stock from \$100,000 to \$200,000.

MINING

Ala., Crutdu.—Iron.—C. E. Buek of Chattanooga, Tenn., and W. F. Stowers of Gadsden, Ala., purchased and will develop iron-ore land; Mr. Buek wires Manufacturers Record: "Estimated cost of double compartment shaft, including mining machinery, \$100,000; capacity 1200 tons daily; property embraces 700 acres."

Ky., Nicholasville.—C. F. Evans of New York leased plant of Central Pigment Co.; proposes to organize company with capital stock of \$100,000 to \$150,000 and enlarge and improve plant.

Mo., Joplin.—Lead and Zinc.—H. E. Leary leased 300 acres mining land and will develop; erect concentrating mill.

Mo., Kansas City.—Lead and Zinc.—Mariposa Mining Co. incorporated with \$16,000 capital stock by E. H. Farrar, J. H. Forrester, A. E. Swain and others.

N. C., Bakersville.—Mica.—Bakersville Mica Co. applied for charter; will organize to continue development of mica properties; has 40 acres and options; present daily output 50 pounds; has worked properties by hand for 30 years to natural water table and now contemplates installing machinery; C. S. Young, treasurer, Bourse Bldg., Baltimore, Md.

Okl., Okmulgee.—Dollar Mining Co. incorporated with \$150,000 capital stock by T. J. Embree, W. A. Munson, Jr., and W. W. Barrington.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile—Wharf Sheds.—City is having plans prepared by Engineer Goulan of New Orleans La., for sheds at new municipal wharves; Wright Smith, City Engineer.

Ark., Argenta—Subway.—St. Louis, Iron Mountain & Southern Railway, E. F. Mitchell, chief engineer, St. Louis, Mo., will construct proposed subway at 2d St.; cost about \$10,000.

Fla., Pensacola—Dock.—Warren Fish Co. will construct dock and marine railway.

Md., Baltimore—Dredging.—Board of Awards awarded contract to Sanford & Brooks Company, Commerce and Water Sts., Baltimore, at 10.9 cents per cubic yard for dredging upper harbor; remove about 75,000 cubic yards; O. F. Lackey, harbor engineer. (Call for bids lately noted.)

Mo., Jefferson City—Creek Improvements.—City voted \$70,000 bond issue for straightening and sanitation of crooked creeks in city, etc. Address The Mayor. (See "Sewer Construction.")

Okla., Davis—Dam.—Davis & Turner Falls Southwestern Railroad Co. (George R. Vaughn and others) will construct dam across Honey Creek to impound water for small power plant, etc.; cost \$20,000; George B. Vaughn, contractor; E. A. Hill, engineer in charge; both of Davis. (Recently noted.)

Tex., Rockport.—San Antonio, Rockport & Mexican Railroad, R. R. Russell, president, San Antonio, Tex., will, it is reported, construct docks.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Publishing.—Whitehead Publishing Co. increased capital stock from \$5000 to \$10,000.

Ala., Camden—Hardware, etc.—People's Hardware Co. (recently reported incorporated with \$10,000 capital stock) will deal in general hardware and builders' supplies; W. R. Alford, president; D. S. Pritchett, vice-president; J. E. Fuller, secretary-treasurer; J. A. Fuller, sales manager. (See "Machinery Wanted.")

Ark., Magnolia—Publishing.—Columbia Publishing & Printing Co. incorporated with \$10,000 capital stock.

Fla., Pensacola—Marine Railway.—Warren Fish Company will construct marine railway and dock.

Fla., Tampa—Transportation.—Del Oro Transportation Co. incorporated with \$25,000 capital stock; Robert J. Knight, president; William C. Knight, vice-president; M. M. Knight, secretary-treasurer.

Ga., Atlanta—Electroplating.—N. A. Bartholomew, 150 Edgewood Ave., has organized company with \$10,000 capital stock to install electroplating plant. (See "Machinery Wanted.")

Ga., Atlanta—Hardware.—Kirkpatrick Hardware Co. incorporated with \$75,000 capital stock, and privilege of increasing to \$300,000, by W. M. Kirkpatrick, A. C. Prichard and P. H. Sanders.

Ga., Fort Screven—Laundry.—Erection of laundry at reservation is contemplated; Wm. S. Rhodes, civil engineer, may be addressed at office of superintendent of construction. (See "Machinery Wanted.")

Ga., Greensboro—Milk Depot.—Mr. Austin, Detroit, Mich., representing N. O. Nelson of St. Louis, Mo., is promoting organization of company to establish milk and cream depot and ice plant; will consolidate with Greensboro Milk & Cream Co., main offices Atlanta, Ga.

Ky., Louisville—Printing.—Caxton Printing Co. changed name to Caxton Company and increased capital stock from \$10,000 to \$50,000.

Ky., Louisville—Grain Elevator, etc.—H. Verhoff & Co. will erect fireproof boilerhouse; cost \$3200.

La., New Orleans—Steamboat Line.—New Orleans Steamship Co. has been organized; J. H. W. Steele Company, Whitney-Central Bldg., will be local agents.

Md., Baltimore—Marine Hardware, etc.—James Walker Company, 123 Light St., organized with James Walker, president, and R. G. Mowbray, treasurer; will manufacture and deal in marine hardware, shipbuilders' contractors' and fishermen's supplies, etc.

Mo., Huntsdale.—D. F. Pipes Cattle Co. incorporated with \$100,000 capital stock by D. F. Pipes, S. C. Hunt, H. H. Bright and others.

Mo., Independence—Publishing.—Independence Newspaper Corporation incorporated with \$5000 capital stock by H. J. Richmond, Jesse L. Martin, C. C. Madison and others.

Mo., Kansas City—Construction.—Mid-West Construction Co. incorporated with \$10,000 capital stock by H. C. Shimp, James A. Jackson and D. W. Morton.

Mo., Kansas City—Construction.—Fidelity Construction Co. incorporated with \$100,000 capital stock by John W. Hoffman, C. G. Brooks and C. Hoffman.

N. C., Asheville—Hardware.—Brown Hardware Co. incorporated with \$15,000 capital stock by Hugh C. Brown, Edwin L. Brown, Jr., James G. Strikeleather, Frank M. Weaver and others.

Okla., Oklahoma City—Printing.—O K Printing Co. incorporated with \$5000 capital stock by F. A. Tinkham, D. W. Tinkham and F. T. Cook.

S. C., Aiken—Publishing.—Sentinel Co. incorporated by W. E. Duncan, H. E. Gyles and C. W. Burch to publish weekly newspaper.

S. C., Ridge Spring—Hardware.—Ridge Spring Hardware Co. incorporated with \$5000 capital stock by S. M. Colclough and C. P. Colclough.

S. C., Greenwood—Publishing.—News-Schmitt incorporated with \$2500 capital stock by R. S. McDowell, W. T. Crews and W. P. Beard.

S. C., Sumter—Builders' Supplies.—Sumter Building Supply Co. incorporated with \$10,000 capital stock; J. M. Harby, president; W. H. Cuttino, secretary-treasurer.

Tenn., Knoxville—Cresosoting.—L. A. Moore, Chattanooga, Tenn.; R. L. Moses, Cincinnati, O.; Rufus Lucas, Maryville, Tenn., and others are interested in organizing company to build plant to creosote timber used in railroad construction and shingles for roofing; estimated cost \$15,000 to \$25,000.

W. Va., Welch—Publishing.—Welch Publishing Co. incorporated with \$10,000 capital stock by J. J. Swope, W. J. McClaren, Sam G. Walker, R. B. Bernheim and others.

MISCELLANEOUS FACTORIES

Ala., Andalusia—Turpentine.—Matthews Turpentine Co. incorporated with \$15,000 capital stock by C. B. Matthews, J. R. McLean and A. C. Darling.

Ala., Birmingham—Medicine.—Indian Herb Medicine Co. incorporated with \$12,000 capital stock by J. G. Gordon, J. B. Gordon, A. M. Gordon and Eliza Gordon.

Ala., Montgomery—Candy.—Ducros Candy Co. incorporated with \$3000 capital stock by Robert Ducros, I. F. Swatt and George Ducros.

Ark., Rogers—Carbon Decomposer.—Rogers Chemical Co., F. L. Wallin, president (recently noted incorporated with \$25,000 capital stock), will operate plant with daily capacity of 3000 to 5000 gallons carbon decomposer; will install tanks, etc. (See "Machinery Wanted.")

D. C., Washington—Aeroplane Propellers.—American Propeller Co., Spencer Heath, president, 616 G St. N. W., will establish plant to manufacture aeroplane propellers; location not determined; will probably lease building already equipped; daily capacity, 5 to 10 aeroplanes.

D. C., Washington—Graphophones.—Sheldrake Manufacturing Co. incorporated with \$15,000 capital stock; Henry L. Sheldrake,

Ky., Georgetown—Wax Plant.—Indian Refining Co., 17 Battery Pl., New York, telegraphs Manufacturers Record as follows relative to rebuilding burned plant: "No decision reached regarding new construction of Georgetown plant." (Recently reported burned at loss of \$125,000.)

Ky., Gracey—George A. Dicke & Co., Hopkinsville, Ky., will, it is reported, establish distillery.

Ky., Louisville—Clothing.—Louisville Clothing Co. increased capital stock from \$50,000 to \$100,000.

Ky., Louisville—Advertising Specialties.—Advertising Specialty Co. incorporated by John F. Prinz, H. H. Krebs and J. C. McFerran.

La., Abbeville—Sugar.—Vermillion Sugar Co. organized by L. A. Morel, Jeanerette, La.; O. J. Chauvin, J. E. Nettles, A. J. Godard and others to establish 1000-ton sugar plant; steel construction; cost about \$200,000. (Recently mentioned.)

La., Meeker—Sugar Mill.—Meeker Sugar Refining Co., main office, 1515 First National Bank Bldg., Chicago, Ill., awarded contract to A. F. Delbert, New Orleans, La., to erect sugar mill; C. T. Rayner & Son, supervising engineers, 213 N. Peters St., New Orleans, La.

Md., Baltimore—Marine Hardware, etc.—James Walker Company, 123 Light St., organized with James Walker, president, to manufacture and deal in marine hardware, etc. (See "Miscellaneous Enterprises.")

Miss., Jackson—Gas.—Jackson Railway & Light Co. will extend gas plant; cost about \$2500.

Miss., Wiggins—Pickles, Hominy, etc.—American Pickle & Canning Co., P. H. Roberts, manager, opens bids January 15 on machinery for previously-noted plant. (See "Canning and Packing Plants and Machinery Wanted.")

Mo., Brookfield—Tires.—Burgess Patent Tire Manufacturing Co. (recently noted incorporated) will have tires manufactured, then assemble same in Brookfield; J. W. Burgess, president; D. T. Smith, vice-president and manager; G. F. Burgess, secretary; L. J. Cutler, treasurer. (See "Machinery Wanted.")

Mo., Kansas City—Automobile Lock and Circuit Breaker.—Automobile Combination Lock & Circuit Breaker Co. incorporated with \$25,000 capital stock by Smith Baker, S. R. Hill, J. W. Nowlin and others.

Mo., St. Joseph—Candy.—Doniphan Candy Co. incorporated with \$100,000 capital stock by Frederick Doniphan, John W. Castle and Frank Burde.

Mo., St. Louis—Shoes.—International Shoe Co. incorporated with \$25,000,000 capital stock; consolidates shoe factories in St. Louis, Hannibal, St. Charles, Cape Girardeau, Washington, Jefferson City, Hermann and DeSoto in Missouri, and in Springfield and Belleville, Ill.; Jackson Johnson (president Roberts, Johnson & Rand Shoe Co.), president; Henry Peters (president Peters Shoe Co.), vice-president. (Recently mentioned.)

Mo., St. Louis—Butter.—Blue Valley Butter Co. incorporated by L. C. Hamilton, J. A. Walker, C. J. Walker and others.

Mo., Trenton—Trenton Gas & Electric Co. incorporated with \$50,000 capital stock by J. T. Menefee, Clarence O. Young and Jasper C. Young.

N. C., Greensboro—Clothing.—Wade Stock and Co. incorporated with \$25,000 capital stock by Wade Stockard, Hugh McGulgan and Roland C. Hill, all of Greensboro, and H. S. Wimlish of Lynchburg, Va.

N. C., Winston-Salem—Aeroplanes.—Winston-Salem Aerial Co. organized by W. H. Sloan and John Lehman to manufacture aeroplanes.

N. C., Winston-Salem—Granite.—Blue Pearl Granite Co. will install additional machinery and remove plant to site on Liberty St.; equipment will include electric traveling crane with two motors and carrying capacity of eight tons; polishing machines, each to be operated by 20-horse-power motor; surfacing machines, compressor operated by 75-horse-power motor, and 100-horse-power motor to operate remaining machines; erect wings widening shed by 40 feet; cost \$8000 to \$10,000.

Okla., Tulsa—Rigging and Reels.—Parkersburg Rig & Reel Co. will erect addition to plant.

Okla., Tulsa—Nut Locks.—J. S. Bell, A. H. Bell and E. E. Miller contemplate establishing plant to manufacture patented device to lock nuts on machinery, railroad crossings, etc.

Okla., Tulsa—Pumps.—J. J. Groethen plans manufacture of duplex hand pump; will award contract. (See "Machinery Wanted.")

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Tex., Houston—Laundry.—Ineeda Laundry and Dye Works awarded contract to W. H. Young, 306 Lumberman's National Bank Bldg., Houston, to erect laundry building; 150x150 feet; two stories; Kahn system of reinforced concrete; plans by R. D. Steele, 212 First National Bank Bldg., Houston; machinery purchased. (Recently noted.)

Tex., Houston—Engineering.—South Texas Engineering Co., First National Bank Bldg. (recently noted incorporated), has elected W. B. Renn, president; C. H. Herbert, vice-president; D. Atchinson, secretary; will do general engineering work. (See "Machinery Wanted.")

Tex., Wellington—Printing.—Leader Printing Co. incorporated with \$8000 capital stock by Thomas Durham, J. D. Camp and R. H. Templeton.

Va., Clarksville—Lithia Springs Water.—McGee Chlorinated Lithia Springs Water Co. incorporated with \$100,000 capital stock; J. P. Taylor, president; G. B. Burrow, treasurer; S. L. Magee, secretary.

Va., Danville—Printing.—Boatwright Bros. will rebuild printing plant; fireproof concrete construction; machinery will include printing and binding machinery; not ready for bids; plans not definitely made. (Recently reported burned.)

Va., Galax—Printing.—Blue Ridge Printing Co. incorporated with \$8000 capital stock; M. V. Stedman, president, Stuart, Va.; A. S. Lawson, vice-president, Baywood, Va.; S. F. Landreth, secretary-treasurer, Galax.

Va., Richmond—Publishing.—Star Publishing Corporation incorporated with \$50,000 capital stock; H. H. Chalkley, president; W. R. Storrs, vice-president; O. Raymond Brown, secretary-treasurer.

president, 13 2d St. N. E.; William N. Roach, Jr., vice-president; Fred J. Brennan, secretary-treasurer.

Fla., Garniers—Turpentine.—Garniers Turpentine Co. incorporated with \$9000 capital stock; E. P. Rose, president, Valdosta, Ga.; S. M. Johnson, vice-president, and W. H. Spivey, secretary-treasurer, both of Garniers.

Fla., Jacksonville—Naval Stores.—Hall Naval Stores Co. will be incorporated with \$50,000 capital stock to manufacture naval stores, lumber, cross-ties, etc., and develop lands; R. S. Hall, president, Ocala, Fla.; J. R. Powell, vice-president, and D. R. McNeill, secretary-treasurer, both of Jacksonville.

Ala., Vinegar Bend—Pulp.—D. H. Greene, care of Vinegar Bend Lumber Co., contemplates building pulp plant; has not made definite arrangements. (Lately mentioned.)

Ga., Cedartown—Cotton Planter.—R. H. Prior has patented cotton planter; contracted with Noiseless Wheel & Truck Co. to manufacture.

Ga., Savannah—Turpentine, etc.—Atlantic Turpentine & Refining Co. has 20 acres of land, and will soon begin construction of wood distilling plant near Savannah; cost \$300,000; construction by company's force; no contracts; financial office, 421 Chestnut St., Philadelphia, Pa.; executive and sales office, 164 Front St., New York; manufacturing headquarters, Germania Bank Bldg., Savannah. (Previously noted.)

Ga., Valdosta—Harness, etc.—The Hewlett Company incorporated with \$5000 capital stock by G. C. Morgan, M. J. Paine and others; to manufacture Hewlett patented hame tug and trace attachment, harness and harness hardware.

Tenn., Chattanooga—Mattresses.—J. H. Parham & Company incorporated with \$10,000 capital stock by J. B. Parham, J. H. Parham, A. D. Otis, G. R. Lynch and J. W. Eastman; will continue mattress factory of J. H. Parham & Company.

Tenn., Columbia—Bakery.—Riddle Reagan of Columbia and Harry Bauman, Nashville, Tenn., will establish bakery.

Tenn., Memphis—Millinery.—Eastern Trimmed Hat Co. increased capital stock from \$9000 to \$20,000.

Tenn., Nashville—Rubber Hat Protector.—Nashville Rubber Hat Protector Co. incorporated with \$25,000 capital stock to manufacture rubber covers for hats; Norman E. Harris, president; Miller Dismukes, vice-president; I. G. Smith, secretary.

Tenn., Nashville—Chewing Gum.—Laxatan Chewing Gum Co., J. J. Fletcher, president, Chattanooga, Tenn., will establish chewing gum factory; leased building at 1st St. and Bridge Ave.

Tex., Brownsville—Soap.—J. S. and M. S. Cross will install soap and kettle tanks.

Tex., Dallas—Disinfecting Machines and Disinfectants.—Southern Disinfecting Co., W. H. Harrell, secretary, 208 Lane St., will erect fireproof plant to manufacture disinfecting machines and disinfectants; machines to be of aluminum and glass; daily capacity 1000 machines; plans not definitely decided; not ready for machinery. (Recently reported incorporated with \$300,000 capital stock.)

Tex., Fort Worth—Harness and Saddlery and Tannery.—T. R. James & Sons changed name to James-Mickle-Schow Company and increased capital stock from \$200,000 to \$400,000.

Va., Alexandria—Coryllers.—International Coryllers Co. incorporated with \$150,000 capital stock; Frank S. Appelman, president (Warder Bldg.); W. J. Turkenton, vice-president; R. L. Newhouser, secretary, all of Washington, D. C.

Va., Lynchburg—Paper-Roll Lock-Block.—Paper-Roll Lock-Block Co. incorporated with \$25,000 capital stock; J. L. Orr, president; A. J. Kohler, vice-president; Fred Graves, second vice-president; Jesse Oakes, secretary-treasurer.

Va., Norfolk—Paint.—Marraco Paint Co. incorporated with \$25,000 capital stock; H. F. Lorraine, president; C. V. Curtis, vice-president; C. R. Murray, secretary-treasurer.

Va., Norfolk—Lime.—Charles W. Friddy & Co. have plans and awarded contract to R. E. Raeford, Norfolk, to erect lime factory; 120x329 feet; mill construction; electric lighting; cost \$18,000. (Recently noted.)

Va., Rosslyn—Gas.—Rosslyn Gas Co. increased capital stock from \$100,000 to \$200,000.

W. Va., Jane Lew—Gloves, Overalls, etc.—George B. Waggoner and associates contemplate establishment of factory for cotton gloves, blouses and overalls. (See "Machinery Wanted.")

W. Va., Morgantown—Glass.—A. E. Lewis Company, Arthur E. Lewis, manager, will rebuild glass factory reported burned; 40x80 feet; cost \$2500; plans not definite.

W. Va., Moundsville—Glass.—Fostoria Glass Co. contemplates increasing capital stock to \$1,000,000 and building furnace for blown ware.

W. Va., Parkersburg—Milk Bottles.—Standard Milk Bottle Manufacturing Co., L. E. Tigner, general manager, contemplates erecting additional plant.

MOTORS AND GARAGES

Fla., St. Petersburg.—H. R. Binnie has plans by Bonniwell & Son, St. Petersburg, for proposed garage, blacksmith and business building at First Ave. North, near 3d St.; front of red pressed brick and plate glass; remainder of structure ordinary building brick; two stories.

Fla., Tampa.—H. G. Warner awarded contract to Harry Livi, Tampa, to erect garage and machine shop; 60x120 feet and 52x105 feet; also erect six stores, 16x55 feet; fireproof construction; gas heat; electric lighting; cost \$25,000. (Recently noted.)

Ga., Savannah.—E. F. Broderick purchased property at Drayton and Perry Sts., including three buildings; will erect two-story building to replace one structure, remodel others, connect all and convert into garage; entire ground floor dimensions 90x90 feet; cost of improvements about \$12,000.

Md., Baltimore.—J. S. Ditch & Co. incorporated with \$20,000 capital stock by J. Smith Ditch, North and Mt. Royal Aves.; John Malory Taylor and Dennis Blundell Taylor; will deal in automobiles, motor boats, engines, motors, etc.

Mo., Kansas City.—White Motor Co. incor-

porated with \$6000 capital stock by Leigh Hunt, R. C. Clark and H. D. Ellinwood.

Mo., St. Louis.—American Motor Sales Co. incorporated with \$5000 capital stock; Clem T. Strauss, president; Freen B. Nulsen, vice-president; C. W. Waughop, secretary-treasurer; will deal in and repair automobiles at 4914 Delmar Blvd.

Mo., St. Louis.—Henry Leschen, president of A. Leschen & Sons Wire Rope Co., 920 N. Main St., has plans by Larimer & Le Braun, 1503 Chemical Bldg., St. Louis, for automobile factory and repair plant; 1) stories and basement; 400x150 feet; brick and reinforced concrete; cost \$6000. (Recently noted.)

N. C., Charlotte.—Piedmont Motor Car Co. incorporated with \$25,000 capital stock by E. D. Latta, Jr., George D. White and E. V. Patterson; will establish garage, repair shop and agency for automobiles.

Tex., Falfurrias.—Cornell-Miller Texas Farms Co., Robert H. Cornell, president, Commonwealth Trust Co. Bldg., St. Louis, Mo., will erect garage, etc. (See "Land Developments.")

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

N. C., Norfolk.—Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., purchased 150 acres and will build repair shops.

Tenn., Memphis.—Arkansas & Memphis Railroad Bridge & Terminal Co. applied for charter, incorporators being J. T. Harahan of Chicago, Ill. (formerly president of Illinois Central Railroad); C. H. Raine, J. A. Riechman, B. L. Mallory and E. E. Wright; company being organized by Chicago, Rock Island & Pacific Railroad, J. B. Berry, chief engineer, Chicago, Ill.; plans include ultimate expenditure of \$20,000,000 during next few years to construct railroad bridge across Mississippi River, erect freight depots, build passenger station, establish terminal yards, purchase properties, etc.

Tex., Kingsville.—St. Louis, Brownsville & Mexico Railway, F. G. Jonah, chief engineer, will, it is reported, enlarge repair shops; ordered \$40,000 worth of new lathes.

ROAD AND STREET WORK

Ala., Hamilton.—A. F. Bearden, Birmingham, Ala., has contract to grade, drain and gravel 2½ miles of State Aid roads; W. S. Keller, State Highway Engineer, Montgomery, Ala. (Call for bids lately noted.)

Ala., Mobile.—Mobile County Board of Roads and Revenue instructed County Road Engineer to survey Spring Hill, St. Stephens, Hall's Mill and Cedar Point roads, each of which is to be improved for 10 miles from city limits. (Commissioners recently stated to issue \$150,000 of \$500,000 bond issue previously authorized for road construction.)

Ala., Tuscaloosa.—City will construct, improve or pave sidewalks, curbing and combined curbing and guttering; bids received until January 9; 550 square yards cement sidewalk; 1200 linear feet curb and gutter (36-inch gutter); 880 linear feet curb; C. H. Ohme, City Engineer; S. H. Sprott, Jr., president Board of City Commissioners. (See "Machinery Wanted.")

Ark. Tex., Texarkana.—Improvement District No. 14 has \$70,000 available for street paving; C. E. Hayden, Texarkana, engineer in charge; G. W. Fouke and Ben Collins are commissioners of district. (Recently noted.)

Fla., Lakeland.—City voted \$60,000 bonds for brick street paving; John F. Cox, Mayor; C. F. Brush, engineer in charge. (Recently noted.)

Fla., St. Augustine.—City contemplates paving with asphalt macadam Saragossa St. from Malaga to Cordova St., and Central Ave. from King to Bridge St. Address The Mayor.

Fla., Tampa.—Board of Public Works accepted offer of Tampa Electric Co. to pave with vitrified brick and curb with granite Seventh Ave. from Tampa to Ola St.; company to be paid from bond issue.

Ga., Dublin.—Laurens county will vote January 9 on \$350,000 bond issue for constructing roads, bridges and school; H. C. Burch, chairman Board of Commissioners.

La., Bastrop.—City will construct concrete walks as follows: 1353 linear feet 8-foot walk, 600 linear feet 7-foot walk, 3735 linear feet 6-foot walk, 19,738 linear feet 4-foot walk and 376 linear feet 4-foot crossings; bids received until January 15; J. K. Skipwith, Mayor. (See "Machinery Wanted.")

La., Shreveport.—Caddo Parish will construct 25 miles of gravel or macadam roads; amount available, \$100,000 annually; J. T. Bullen, Box 772, Shreveport, parish engineer;

bids opened about March 1 or April 1. (Recently noted.)

Md., Baltimore.—Paving Commission decided to pave five additional miles of streets; Bond, from Hoffman to North Ave.; Caroline, from Chase to Hoffman; Caroline, from Oliver to North Ave.; Eden, from Madison to Lanvale; Central Ave., from Lancaster to Harford; Ensor, from Chase to Lamont; Preston, from Valley to Gay; Lanvale, from Ensor to Broadway; Lafayette Ave., from Alsquith to Broadway; Oliver, from Lamont to Ensor; bids will be advertised about January 17; about eight miles additional paving to be advertised about January 21; also about 15,000 square yards of resurfacing with sheet asphalt, 1½-inch binder and 1½-inch topping; about 10,000 square yards sheet asphalt on 4-inch and 6-inch concrete bases; about 20,000 square yards Belgian block and 20,000 square yards vitrified block paving; bids advertised during January; expenditure about \$1,000,000; H. Kent McCay, chief engineer. (Previously noted.)

Md., Beltsville.—State Roads Commission, Union Trust Bldg., Baltimore, Md., awarded contract to Rush, Mohler & Smith, Hartford, Conn., at \$52,507.68 to construct Baltimore-Washington Blvd. from Beltsville to Contee, about 4.7 miles. (Recently mentioned.)

Md., Ellicott City.—City awarded contract to C. H. Cromwell and J. B. Clark, Ellicott City, to construct 6-inch water macadam road; 20 feet wide in all; cost \$530. (Recently noted.)

Miss., Vicksburg.—City will vote January 23 on \$100,000 bond issue for street paving. Address The Mayor.

Mo., Fulton.—Fulton Eight Mile Road District voted \$100,000 bond issue for road improvements; proposed to construct about 30 miles rock and gravel roads and grade all dirt roads 30 feet wide; R. L. Smith, T. N. Lynes and H. G. Turner, Commissioners. (Recently mentioned.)

Mo., Maplewood.—City awarded contract to G. A. Heenan Construction Co., St. Louis, Mo., at \$21,240 to pave Manchester Rd. from St. Louis city limits to Sutton Ave., and to Graham Granitoid Co., St. Louis, at \$18,183 to pave several thousand feet of sidewalk.

N. C., Fayetteville.—Cumberland county postponed date of election until spring to vote on \$200,000 bond issue for road construction. Address County Commissioners. (Recently noted.)

N. C., Salem, P. O. Winston-Salem.—Town voted \$15,000 bond issue for street improvements; F. A. Fogle, Mayor. (Recently mentioned.)

Okla., Ponca.—City will construct 10,000 square yards brick block paving and 2800 linear feet combined concrete curb and gutter, necessary drains, etc.; bids received until January 8; W. M. Rawlings, City Clerk. (See "Machinery Wanted.")

S. C., Orangeburg.—City will expend \$15,000 to construct about 5800 square yards of vitrified brick pavement; L. H. Wanamaker, City Clerk. (Recently noted to open bids January 15.)

Tenn., Binghamton.—City will construct about 28,734 square feet concrete sidewalk, 5577 linear feet curb, 4960 feet gutter, 1400 cubic yards excavation, 19,700 square yards gravel and 200 feet 24-inch and 350 feet 36-inch soil pipe; bids received until January 9; Harry N. Pharr, engineer, 536 Randolph Bldg., Memphis, Tenn.; H. B. Everett, president Street Commissioners. (See "Machinery Wanted.")

Tenn., Memphis.—City Commissioners approved paving plans for 22 streets, including Edith Ave., Cleveland St., Belvedere Blvd., Oliver Ave., McNeill St., etc.; cost about \$120,000; Heiskell Weatherford, City Engineer.

Tex., Austin.—City will vote about February 1 on probable \$500,000 bond issue for street paving, construction or purchase of present sewer system and purchase of cemetery tract. Address The Mayor.

Tex., Beaumont.—City voted \$60,000 bond issue for street paving. Address The Mayor. (Recently mentioned.)

Tex., Denison.—City will pave Main St. from end of present paving to Travis Ave.; cost to be paid principally by railroads. Address The Mayor.

Tex., Haskell.—Haskell county will vote, it is reported, on \$75,000 bond issue for road construction. Address County Commissioners.

Tex., Orange.—Orange county voted \$200,000 bond issue for constructing and maintaining roads; O. R. Sholars, County Judge. (Recently noted.)

Tex., Orange.—Orange county voted \$300,000 bond issue for road construction. Address County Commissioners. (Recently mentioned.)

Tex., Sour Lake.—Road District No. 2

voted \$50,000 bond issue for road construction. Address District Commissioners.

Tex., Victoria.—Road District No. 2 of Victoria county voted \$200,000 bond issue for road construction. Address County Commissioners.

Tex., Wharton.—Commissioners' Precinct No. 1 of Wharton county will vote January 19 on \$300,000 bond issue for road construction. Address County Commissioners. (Recently noted.)

Va., Virginia Beach.—Princess Anne County Commissioners contemplate construction of road from Virginia Beach to Norfolk, to be bisected by road leading to Princess Anne Courthouse; cost \$60,000 to \$70,000.

W. Va., Marlinton.—Pocahontas county will construct about 172 rods of road; width, 14 feet, including side ditches; bids received until January 2; J. H. Kramer, County Engineer.

SEWER CONSTRUCTION

Fla., Lakeland.—City voted \$75,000 bonds for sewer construction; C. F. Brush, engineer in charge; John F. Cox, Mayor. (Recently noted.)

Fla., Orlando.—City is considering construction of sewer system. Address The Mayor.

Ga., Unadilla.—City awarded contract to Walton & Wagoner, Atlanta, Ga., at \$22,825 to construct sewer and water systems; former includes five miles of sewer; J. B. McCrary Company, Atlanta, Ga., is consulting engineer. (Call for bids lately noted. See "Water-works.")

Ga., Brunswick.—City will probably vote on \$150,000 bond issue for public improvements, principally extension of sewer system. Address The Mayor.

Md., Baltimore.—City awarded contract to Ryan & Reilly, 215 American Bldg., Baltimore, to construct second section of high-level interceptor covering large portion of center of city. (Recently mentioned.)

Mo., Cameron.—City will construct 12,280 feet eight-inch sewer, 36 manholes and three flush tanks; bids received until January 5; Clarence Staples, City Clerk.

Mo., Hannibal.—City will construct vitrified pipe and concrete sewers in Palmyra Ave.; estimated cost \$30,000; bids received about February 1 by W. Y. Youse, City Clerk.

Mo., Jefferson City.—City voted \$70,000 bond issue for public improvements, including construction of storm sewers, building viaduct over Goose Creek and for straightening and sanitation of crooked creeks in city. Address The Mayor.

N. C., Salem, P. O. Winston-Salem.—Town voted \$10,000 bond issue for extension of sewer system; F. A. Fogle, Mayor. (Recently mentioned.)

Tex., Austin.—City will vote about February 1 on probable \$500,000 bond issue for construction or purchase of sewer system, etc. Address The Mayor. (See "Road and Street Work.")

Tex., Beaumont.—City voted \$30,000 bond issue for additional sewer construction. Address The Mayor. (Recently mentioned.)

Va., South Hill.—N. G. Smith is interested in installation of sewers and water-works. (See "Water-works.")

TELEPHONE SYSTEMS

Md., Baltimore.—Chesapeake & Potomac Telephone Co., 5 Light St., will add Virginia and West Virginia to present districts (Maryland and District of Columbia), and plans improvements, including addition of two stories to present nine-story central exchange office building and betterments to Maryland Telephone Co. Bldg.; R. M. Ferris, chief engineer.

S. C., McBee.—Highlands Telephone & Telegraph Co. incorporated with \$5000 capital stock; Loran A. Kerr, president; W. M. Phifer, vice-president; A. Adams, secretary-treasurer.

Tenn., Knoxville.—People's Telephone & Telegraph Co. will make improvements to telephone system, including installation of central energy common battery system and automatic call distributing system.

W. Va., Elkins.—Chenoweth Valley Telephone Co. incorporated with \$5000 capital stock by C. W. Ward, Fred Chenoweth, H. A. Chenoweth and others.

TEXTILE MILLS

N. C., Hickory.—Cotton Cloth.—Ivey Mill Co. (not Ivey Manufacturing Co.) will add new machinery; new equipment will include 7880 spindles, costing about \$46,000; has awarded contract. (Lately mentioned.)

N. C., Rockingham.—Print Cloth.—Hannah Pickett Mills additional four spinning frames comprise 960 spindles and increase company's

equipment to 16,000 spindles, etc.; has awarded contract. (Lately mentioned.)

WATER-POWER DEVELOPMENTS

Ga., Atlanta.—Central Georgia Transmission Co., Macon, Ga., applied to Railroad Commission for authority to issue \$2,000,000 common stock and \$2,500,000 bonds for constructing electrical transmission lines from Griffin, Ga., to Atlanta and necessary substations; will transmit electricity from Jackson (Ga.) development of Central Georgia Power Co. of Macon; W. J. Massee of Macon, president of both companies. (Recently mentioned.)

La., New Orleans.—Henry Floy (consulting engineer), 165 Broadway; Elmer E. Cortbell (civil engineer), F. W. Dunn (president of Dunn Construction Co.), John C. Calhoun and others, all of New York, contemplate development of water-powers in central and western Louisiana and irrigation of extensive tracts of land. Mr. Floy wires to Manufacturers Record: "Those interested not yet prepared to publish details. About 1,000-2,000 acres proposed irrigated; probable investment to \$25,000,000; plans and specifications not yet prepared; amount power development depending on surveys being made." He also writes as follows: "Only most tentative plans have been prepared and no specifications whatever have been drawn; field surveys, etc., are now under way."

S. C., Columbia.—Columbia Railway, Gas & Electric Co. contemplates construction of dam across Columbia Canal and confluence of Broad and Saluda rivers; plan is to develop water-power for transmission of electricity to augment present facilities.

Tex., Columbus.—Commissioners' Court of Colorado County granted franchise to O. A. Zumwalt, E. A. Hutchins and C. E. Sronce to construct hydro-electric plant developing 2000 to 5000 horse-power; cost \$150,000; plans include dam across Colorado River, canal, generating plant, power-house, etc.

WATER-WORKS

Ga., Unadilla.—City awarded contract to Walton & Wagoner, Atlanta, Ga., at \$22,825 to construct water-works and sewer system; will include 1½ miles of six and eight-inch water mains with appurtenances, brick building, reinforced concrete reservoir, 80-horse-power boiler, pumping engine, air lift, and five miles of sewers; J. B. McCrary Company, Atlanta, Ga., is consulting engineer.

Ga., Macon.—City will require 1125 tons 20-inch, 360 tons 12-inch, 380 tons 10-inch, 176 tons 8-inch, 1280 tons 6-inch cast-iron piping and 150 tons special castings; bids received until January 25; W. H. Fetner, chairman Water Commissioners. (Recently mentioned. See "Machinery Wanted.")

Ga., Washington.—City rejected bids for extension of water-works recently noted; will receive new bids until January 20; plans by Westinghouse, Church, Kerr & Co., engineers, New York; Boyce Picklen, Jr., City Clerk. (See "Machinery Wanted.")

Ky., Benton.—O. Brandon, chairman Board of Trustees, states that town will not construct water-works as recently reported.

La., Donaldsonville.—City will improve water-works; G. U. Borde, engineer, New Orleans, La.; Charles Maurin, Mayor. (See "Electric Plants.")

Miss., Vicksburg.—City will vote January 23 on \$400,000 bond issue for purchase of water-works. Address The Mayor.

N. C., Charlotte.—City awarded contract to J. W. Haas of Charlotte at \$19,972.40 to construct water-works pumping station at Catawba River and concrete intake in middle of river; station of reinforced concrete and brick; steel window frames and wireglass fittings; steel girders; patent brick roof; intake to have cofferdam attachments; pipe leading from intake to station to be 36 inches in diameter, and will extend below bed of stream; A. H. Wearn, clerk Water Commissioners. (Call for bids lately noted.)

Okla., Hammon.—City voted \$17,500 of bonds for water-works; bids on construction received January 11; Western Engineering Co., consulting engineer, 703 American National Bank Bldg., Oklahoma City, Okla. (See "Machinery Wanted.")

Tenn., Columbia.—Company will be organized to furnish water and electric light; Granbery Jackson, Nashville, Tenn., will examine and report on condition of water system and electric-light plant of Columbia Water & Light Co.

Tenn., Johnson City.—City will make extension to water-works, including 4,000,000-gallon reservoir; J. B. McCrary Company, Third National Bank Bldg., Atlanta, Ga., consulting engineer; bids opened February

1; William R. Pouder, Recorder. (See "Machinery Wanted.")

Tenn., Memphis.—City is considering improvements and extension of water-works; \$250,000 of bonds issued; Heskell Weatherford, City Engineer.

Tex., Alpine.—J. L. Crawford, J. P. Wilson, J. R. Holland and T. E. Gillett are interested in organization of company to construct water-works; will lay four-inch mains through business section, erect elevated water tower, etc.

Va., South Hill.—N. G. Smith is interested in installation of water-works and sewers. (See "Machinery Wanted.")

W. Va., Kimball.—Kimball Light, Power & Water Co., Conover Bldg., Dayton, O., will make improvements to water-works and electric-light plant; erect necessary power buildings, etc.; cost \$50,000; date of opening bids not set; work will be in charge of engineering department of J. G. Russell Company, Conover Bldg., Dayton, O. (J. G. Russell Company recently noted to have acquired 50-year franchise for water-works and electric-light plant.)

WOODWORKING PLANTS

La., Laplace.—Crates.—O. & A. Montz (owners of Rock Store) contemplate erecting crate factory.

N. C., Jackson.—Buggies, etc.—Ricard Buggy Co. organized with W. T. Picard, president and vice-president; E. H. Picard, secretary-treasurer; will manufacture buggies, harness, wagons, etc., and deal in hardware; has building. (Recently reported incorporated with \$50,000 capital stock.)

N. C., High Point.—Furniture.—United Mills Co. incorporated with \$100,000 capital stock by Frank H. Ford and C. B. Vestal of High Point, John R. Myers and Charles F. Lambeth of Thomasville, N. C.

N. C., Southmont.—Boxes.—C. M. & G. W. Wall, Wallburg, N. C., will install box factory; have let contracts for machinery, etc. (See "Lumber Manufacturing.")

S. C., North Augusta.—Crates.—Augusta Crate Co., 935 Broad St., Augusta, Ga. (recently noted to manufacture patented crate for bottles) will install wood printing press; has plant and buildings. (See "Machinery Wanted.")

Tenn., Jackson.—Staves.—Morris-Harlan Stave Co., Trenton, Tenn., purchased 20 acres and contemplates, it is reported, establishing plant.

BURNED

Ala., Birmingham.—James J. Smith's residence, loss \$12,500; Joel F. Webb's residence, loss \$10,000; both on Altamont Rd., Mountain terrace.

Ala., Gadsden.—Building owned by Echols estate; Mrs. F. L. Moragne's building.

Ala., Headland.—Building occupied by Floyd Bros.; Dr. W. S. Oates' lodge building; total loss about \$11,000.

Ala., Lockhart.—Jackson Lumber Co.'s planing mill; loss about \$100,000.

Ala., Marion.—Marion Mercantile Co.'s store.

Ala., Marion.—Dr. W. R. Barron's building.

Ark., Black Rock.—Cottage Hotel, occupied by Mr. Talley.

Ark., Caddo Gap.—Caddo Drug Co.'s store; Purifier & Franklin's store; loss about \$7500.

Ark., Hot Springs.—First Presbyterian Church. Address The Pastor, First Presbyterian Church.

Ark., Jonesboro.—Grand Leader department store, owned by R. H. Meyer Company; loss \$51,000.

Ark., Kingsland.—E. R. Buster's store; loss \$40,000.

Ark., Kingsland.—E. R. Buster's store; loss \$50,000.

Ark., McPhearson.—Cypert & Page's store; loss \$7500.

Fla., Ocala.—W. H. Harris' residence.

Ga., Acworth.—Penn Mitchell's residence.

Ga., Berlin.—Hires & Paul's store; J. N. Welch's store; Merchants and Farmers' Bank building; two buildings owned by Valdosta-Moultrie Investment Co. of Valdosta, Ga.; total loss about \$20,000.

Ga., Hartwell.—T. J. Linder's two buildings; N. L. Harris' store.

Ga., Hartwell.—A. M. Teasley's store; Farmers and Merchants' Bank; Obarr's Bargain House; loss about \$75,000.

Ga., Modoc.—C. I. Hall's ginnery; loss \$4500.

Ga., Waycross.—Alex. James' hall and theater building, loss \$3500; R. B. Laughing-house's dwelling on Parallel St.

Ga., Waycross.—Buildings owned by Dan

Lott and W. B. Ellington and occupied by J. B. Thorpe & Co. and J. T. Hopkins; loss about \$15,000.

La., New Orleans.—Sam Constanza's store and residence at Dante and Apple Sts.; loss \$5000.

Md., Baltimore.—D. B. Marti Company's fertilizer plant at Union Abattoir, on Wilkens Ave.; probable loss \$100,000.

Md., Baltimore.—No. 4 engine-house, on Lexington St., near Guilford Ave.; James H. Preston, Mayor.

Md., Cambridge.—Nehemiah Henry's building; Bethel Church's parsonage; Violet Carr's residence; total loss \$6000 to \$8000.

Md., Cumberland.—F. Merten's Sons' dwelling-houses; loss \$5000.

Md., Gaithersburg.—Thomas I. Fulk's straw baling plant; loss about \$4000.

Md., Sparrows Point.—Maryland Steel Co.'s four pattern storehouses; loss about \$100,000.

Miss., Brookhaven.—Joseph Henck's residence; loss \$4000.

Miss., Cleveland.—Joseph Friedman's store; loss \$13,000.

Miss., Lexington.—McCain Building, occupied by Estate of Watt McCain and others.

Miss., Como.—C. C. Haynes & Sons' drug store; Sinclair & Jackson's store; A. M. Patterson & Co.'s store; Charles Schwartz Bros.' store; total loss about \$30,000.

Miss., Newton.—Bank of Newton's building at Church and Main Sts.; loss \$7500 to \$10,000.

Miss., Utica.—Kelley & Simmons' store; C. Downing's store.

N. C., Elm City.—Atlantic Coast Line Railway's depot; E. B. Pleasants, chief engineer, Wilmington, N. C.

N. C., Grimesland.—H. H. Proctor's store; D. G. Moore's store.

N. C., Rocky Mount.—W. T. Hines' building, occupied by Keyser's drug store, etc.

N. C., Zebulon.—Zebulon Cotton Oil Co.'s plant; R. B. Creech, local manager.

N. C., Waxhaw.—Hotel McDonald, occupied by Russell McDonald; building owned by Mrs. Lula Bivens of West Durham, N. C.; loss about \$7000.

N. C., Whitakers.—Whitakers Oil Co.'s cottonseed oil mill; loss about \$7000.

Okla., Altus.—Christian Church. Address The Pastor, Christian Church.

Okla., McAlester.—St. John's Catholic Church; loss about \$15,000. Address The Pastor, St. John's Catholic Church.

Okla., Tulsa.—Frank White's livery barn; loss \$12,000.

S. C., Edgefield.—James R. Cantelou's barn; loss about \$3000.

S. C., Rock Hill.—Rock Hill Broom Works; loss \$8000; A. E. Smith, owner.

Tenn., Bristol.—W. L. Campbell's barn; loss \$5000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ark., Little Rock.—Major Stockton of Majestic Range Co., St. Louis, Mo., is reported to erect apartment-house; cost about \$50,000.

Ga., Savannah.—Mrs. Anne C. Warner will erect store and apartment-house at 40th and W. Broad Sts.

Mo., Kansas City.—A. T. Brink will expend \$3800 to erect apartment-house; two apartments; 26x38 feet; ordinary construction; two furnaces; electric lighting; plans and construction by owner. (Recently noted.)

Mo., Kansas City.—Western Improvement Co. will erect store and apartment-house. (See "Stores.")

Tex., El Paso.—J. J. Crawford will expend \$5000 to erect apartment-house; 40x60 feet; three stories; mill construction; heating plant to cost \$5000; plans and construction by owner. (Recently noted.)

Tex., San Antonio.—Dr. Gwinn purchased residence at 337 Garden St. and will convert into apartment-house; will place columns on front and install hot-air heating appliances, etc.

Va., Richmond.—J. H. Chappell will erect two two-story double brick tenement-houses on Vine St. near Floyd Ave.; cost \$12,000.

ASSOCIATION AND FRATERNAL

Ark., Pine Bluff.—Ancient Free and Accepted Masons will, it is reported, erect lodge and office building on W. 2d Ave.; six stories; cost about \$100,000.

Tenn., Martin.—Bludworth Mercantile Co.'s store, loss \$20,000; Dodd & Son's store, loss \$25,000; J. W. House's store, loss \$25,000; Jeter Bros.' store, loss \$25,000; M. L. Martin's store, loss \$10,000.

Tex., Abilene.—Residence owned by W. L. Steffens of Dallas, Tex.; loss \$5000.

Tex., Amarillo.—Wholesale department of Griffin Grocery Co. damaged; loss about \$7000.

Tex., Chriesman.—W. C. Rundzieher's gin-house and seedhouse.

Tex., Amarillo.—A. J. Sanford's store and dwelling at 4th and Madison Sts.; loss about \$7000.

Tex., Ballinger.—W. B. Wood's Colorado Hotel; loss \$7500.

Tex., Coleman.—Daily Advertiser Publishing Co.'s newspaper plant.

Tex., Coleman.—Democratic Voice Publishing Co.'s plant, loss \$9000; Armstrong & Son's store, loss \$7300; Coleman Co-operative Co.'s building, loss \$4500; F. T. Eaos' building, loss \$4500; Upton Henderson's two buildings, loss \$10,000; building owned by D. A. McWilliams of Glen Cove, Tex., loss \$3500.

Tex., Conroe.—Mistrot Bros. & Co.'s store; building owned by Charles Parks of New York.

Tex., Dallas.—Texas Cedar Chest Co.'s plant at Sherman and Paris Sts.; estimated loss, \$17,300; building owned by Vilbig Bros.; loss \$2500.

Tex., Dalhart.—J. V. Powell's business block.

Tex., Fort Worth.—Davis Hotel at 207 S. Boaz St.; loss \$5000.

Tex., Godley.—W. F. Smith's stable; J. T. Dillard & Co.'s office and barn.

Tex., Kingsbury.—M. Flynn's building; loss \$3000.

Tex., Palestine.—H. W. Parkhill's residence at 519 Louisiana St.; loss several thousand dollars.

Tex., Pampa.—Tom Lane's residence; loss \$4000.

Tex., Shepherd.—Shepherd Gin & Grist Mill Co.'s ginhouse; loss \$6700.

Tex., Temple.—Daniel Jarrell Furniture Co.'s warehouse.

Tex., Yukon.—Walter Lander's stable; building owned by F. Mergenthal.

W. Va., Norfolk.—Coffigan, Carper & Simpson Lumber Co.'s plant.

W. Va., Benwood.—Hitchman Coal Co.'s coal tipple.

W. Va., Huntington.—McCoy Building, etc.

W. Va., Martinsburg.—Martin & Powell's cafe; loss several thousand dollars.

W. Va., Morgantown.—A. E. Lewis Glass & Door Co.'s glass door factory; loss \$12,000.

W. Va., Point Marion.—Peter J. Guyaux, Jr.'s building; loss about \$15,000.

Ga., Atlanta.—Improved Order of Red Men, 86 Central Ave., will erect wigwag; cost about \$35,000.

Ky., Louisville.—Young Men's Christian Association has tentative plans by McDonald & Dodd, Lincoln Bldg., Louisville, for building at 3d St. and Broadway; fireproof; cost \$400,000.

Tex., Denison.—Woodmen of the World, J. M. Denton, clerk of building committee, will probably award contract to Tibbith & Hagul to erect lodge building; 50x120 feet; two stories; mill construction; electric lighting; cost \$11,500; plans by F. G. Niemeyer, 1130 W. Hull St., Denison. (Recently noted.)

W. Va., Morgantown.—Benevolent Protective Order of Elks plans to erect lodge building.

BANK AND OFFICE

Ala., Birmingham.—S. B. Marks and W. M. Marks, trustees of Bragg-Marks estate, Montgomery, Ala., are reported to erect office building to replace Olympia Hotel.

Ala., Gadsden.—Echols estate will probably erect office building to replace structure reported burned.

Ark., Pine Bluff.—Ancient Free and Accepted Masons will, it is reported, erect lodge and office building. (See "Association and Fraternal.")

Fla., De Land.—William M. Fields, Jr., will erect office and store building. (See "Stores.")

Ga., Atlanta.—Peachtree Investment Co. incorporated with \$50,000 capital stock by Frank C. Owens and others; will make improvements to building at Peachtree and Auburn Sts.

Ga., Savannah.—E. F. Broderick purchased residence at State and Drayton Sts., and will convert into office and store building; stores on ground floor and 15 or 20 offices above; cost of improvements about \$600.

Ga., Waycross.—Waycross Auditorium Co. will erect office, theater and auditorium building. (See "Miscellaneous Structures.")

Mo., Fenton.—Dr. Martin Dalton is interested in erection of bank building; 26x36 feet; ordinary construction; heating and lighting not decided; architect not selected. (See "Machinery Wanted.")

N. C., Wilmington.—Atlantic Coast Line Railroad, E. B. Pleasant, chief engineer, has plans by J. F. Leitner, Wilmington, for passenger station and office building. (See "Railway Stations.")

Okla., Muskogee.—Muskogee Security Co., A. J. Campbell, president, will remodel McKibbin Bldg. and erect three additional stories; provide lobby on ground floor; install elevators; reface front, etc.; cost of improvements about \$50,000.

Okla., Tulsa.—Planters' Bank & Trust Co. purchased building on Atlantic St., and will improve and occupy for banking purposes.

Okla., Tulsa.—A. Miller Hammett will, it is reported, erect office building at Fourth and Boston Aves.

S. C., Chester.—People's Bank, Dr. G. B. White, president, purchased building on Gadsden St. and will remodel for bank building.

S. C., Columbia.—Union Bank Building Co. will expend \$175,000 to erect bank and office building; 26x103 feet, with L. 21x56 feet; 10 stories; fireproof construction; heating, lighting, etc., not determined; plans by W. A. Edwards, 632 Candler Bldg., Atlanta, Ga.; date of opening bids not set; architect may be addressed. (Recently noted.)

Tenn., Knoxville.—John Kewan Peebles, architect, Law Bldg., Norfolk, Va., may be addressed relative to 12-story bank and office building to be erected by Holston National Bank. (Recently noted to receive bids until January 12.)

Tenn., Nashville.—Sunday-School Board of Southern Baptist Convention, Church St., will erect office building.

Tex., Dallas.—Guy Sumpter will open bids and let contract about February 1 to erect office and store building. (See "Stores.")

Tex., Houston.—D. R. Beatty is having plans prepared by Cooke & Co., Houston, for store and office building; three stories; reinforced concrete foundation partly completed. (Previously noted to erect three-story structure, but these plans changed.)

Tex., Rockdale.—J. W. Perry will erect office and store building; cost \$3000. (See "Stores.")

Tex., San Benito.—San Benito Land Co. will erect store and office building. (See "Stores.")

Tex., Temple.—Farmers' State Bank, A. L. Flint, president, acquired bank building at Main St. and Avenue A, and will expend \$19,000 for improvements.

Va., Richmond.—Virginia Railway & Power Co. has site at 7th and Franklin Sts., 52x110 feet, to erect office building; company wires Manufacturers Record: "Expect to erect building for company's offices; steel, brick and terra-cotta; no further details at present."

Va., Roanoke.—George H. P. Cole will erect bank building; 25x35 feet; brick and stone; heating, lighting, etc., not determined; architect not selected. (See "Machinery, etc., Wanted.")

CHURCHES

Ark., Jonesboro.—First Baptist Church, Rev. E. E. Dudley, pastor, will erect edifice; 146x120 feet; seating capacity 175; cost \$70,000.

Ga., Rome.—Christian congregation will erect edifice; cost about \$25,000. Address The Pastor, Christian Church.

La., New Orleans.—Lafayette Presbyterian Church is having plans prepared by Alexander Hay, New Orleans, for proposed Harvey chapel; interior dimensions 28x40 feet; seating capacity about 150; Dr. J. C. Barr is interested.

N. C., Asheville.—First Baptist Church will erect edifice at Bartlett St. and French Broad Ave. Address The Pastor, First Baptist Church.

N. C., Charlotte.—Rev. Francis M. Osborne is interested in erection of proposed St. Martin's chapel at E. 7th St. and Hawthorne La.

S. C., Columbia.—African Methodist Episcopal Church has plans by W. A. Rayfield & Co., Echols-Strong Bldg., Columbia, for edifice; 45x85 feet; mill construction; hot-air heat; electric lighting; cost \$10,000; proposals may be addressed to T. J. Entzminger, 1616 Tobacco St.

S. C., Marion.—Building committee of First Methodist Episcopal Church South, W. A. Stackhouse, chairman, and P. B. Hamer, secretary, will receive bids until noon February 1 to erect edifice; certified check for \$1000; plans and specifications on file with committee and at office of Wheeler & Stern, architects, Charlotte, N. C., or may be had from architects on deposit of \$50.

Tex., Kerrville.—St. Mary's Catholic Church, Rev. Father Kemper, pastor, will remove church to Main St. and remodel; erect school, convert rectory into convent, etc.

Tex., Navasota.—Methodist church will soon open bids to erect edifice previously noted; 78x110 feet; hot-air heat; electric lighting; cement sidewalks; cost \$25,000; plans by Waller & Field, Fort Worth, Tex.; address proposals to Rev. W. D. White, pastor. (See "Machinery Wanted.")

Va., Petersburg.—West Street Methodist Church, Rev. Lloyd C. Moore, pastor, 541 W. High St., invites architect to submit plans about first of year for edifice; brick; steam heat; electric lighting; cost \$15,000.

CITY AND COUNTY

Ala., Clayton.—Jail.—Board of Revenue, Barbour county, will make improvements to jail; cost \$3000 to \$5000; George A. Johnston, member of board.

Fla., Lakeland.—Public Buildings.—City voted \$15,000 for public buildings; John F. Cox, Mayor. (Recently noted to vote on bonds for fire station.)

Ky., Greenville.—Jail.—Muhlenberg county will erect jail; cost \$15,000 to \$18,000. Address County Commissioners.

Va., Portsmouth.—Municipal.—Sealed proposals received by public property committee of City Council, Portsmouth, Va., until noon February 6 to erect municipal building in accordance with plans and specifications furnished by B. F. Smith, architect, 817 14th St. N. W., Washington, D. C.; plans and specifications may be seen at office of City Clerk or at office of architect, or may be obtained from City Clerk by depositing certified check for \$50; forms of proposal furnished bidders by City Clerk or architect, and no proposal considered unless made on this form and in strict compliance with same; certified check or "trust company's bond" in the sum of \$500; each proposal must state date and time for completion of building and its appurtenances, ready for use and occupancy; usual rights reserved; address proposals to L. P. Slater, City Clerk, and marked "Proposal to Erect a Municipal Building," or "Proposal to Erect and Furnish a Municipal Building." S. B. Hutchins, chairman; L. Privett, vice-chairman, public property committee. (Recently mentioned.)

COURTHOUSES

Ark., Heber Springs.—Proposals received at office of Commissioners of Public Buildings at Heber Springs, Ark., until noon February 1 for construction of courthouse at Heber Springs according to plans and specifications of Clyde A. Ferrell, architect, Little Rock, Ark.; plans on file at office of Commission and at office of architect, State Bank Bldg., Little Rock, Ark.; contractors may secure plans and specifications from architect on deposit of \$50; all bids to be made upon work as a whole and submitted on special blank forms to be obtained from architect; certified check of \$1000; usual rights reserved; J. R. Baker, J. W. Hardy, Commissioners of Public Buildings.

DWELLINGS

Ala., Bay Minette.—R. D. McPhaul will erect three dwellings.

Ala., Ensley.—Tennessee Coal, Iron & Railroad Co., Birmingham, Ala., will erect 50 dwellings near mine No. 2; also reported to erect about 200 dwellings at and near mine No. 12; will erect proposed commissary.

D. C., Washington.—J. W. Carr, 506 11th St. N. W., will erect dwelling at 4521 Georgia Ave. N. W.; frame; cost \$3500.

D. C., Washington.—St. Aloysius' Catholic Church, N. Capitol and I Sts. N. W., will expend \$15,000 to repair rectory.

D. C., Washington.—Rev. W. L. De Vries, 327 E. Capitol St., will erect dwelling at 3515 Woodley Rd. N. W.; two stories; frame; cost \$7500.

D. C., Washington.—H. R. Howenstein, 1514 F St. N. W., has plans by F. T. Schneider, 1314 F St. N. W., Washington, for dwelling; 22x36 feet; eight rooms and bath; ordinary construction; cost \$3500; construction by owner. (Recently noted.)

Fla., St. Petersburg.—William L. Murphy will erect residence; bungalow type; cost about \$10,000.

Fla., Tampa.—Dr. C. S. Stafford will erect three dwellings at Kay St. and Orange Ave.

Fla., Stuart.—Carroll Duncombe contemplates rebuilding residence recently reported burned.

Md., Baltimore.—Abell Building Co., Abell Ave. and 32d St., has plans for and will erect six dwellings on 31st St. between Abell Ave. and Barclay St., and 27 on Abell Ave.; two stories; semi-detached; brick; 16x56 feet; cost \$2400 each.

Md., Baltimore.—John J. Carlin, 215 St. Paul St., will expend \$17,000 to erect eight dwellings; 24x36 feet; ordinary construction; steam heat; gas and electric lighting; plans by Stanislaus Russell, corner Clifton Ave. and 7th St., Baltimore; construction by owner. (Recently noted.)

Md., Baltimore.—Augustus Hampson, 207 St. Paul St., will erect 26 dwellings recently noted; 13x42 feet; ordinary construction; hot-air heat; gas lighting; plans and construction by owner. (See "Machinery Wanted.")

Md., Baltimore.—Lowman Building Co. has plans by John K. Stack, 12 E. Lexington St., Baltimore, for 12 dwellings on Lowman St. between Fort Ave. and Clement St.; two stories; brick; 12x60 feet; cost about \$12,000.

Md., Baltimore.—F. E. Yewell, Jr., 2745 N. Calvert St., will expend \$4500 to erect dwelling; 26x35 feet; ordinary construction; steam heat; electric lighting; plans by Jacob F. Gerwig, 600 Equitable Bldg., Baltimore; construction by owner. (Recently noted.)

Md., Baltimore.—Roland Park Company, 408 Roland Ave., Roland Park, Md., will erect number of semi-detached cottages on York Rd. in connection with development of Guilford property.

Md., Cambridge.—Albanus Phillips is having plans prepared by L. W. Crawford, Wilmington, Del., to erect residence; brick; cost \$20,000.

Md., Frederick.—Frederick Realty Co., incorporated with \$2000 capital stock by S. Elmer Brown, George Wilcoxon and O. C. Wareheim, will erect six dwellings; six rooms each; semi-detached type; brick or brick and wood; baths, hot-air heat, etc.

Md., Roland Park.—Charles C. Heldman, 2730 N. Charles St., Baltimore, Md., will erect residence at Deepdene and Roland Rds.; two and a half stories; brick and frame.

Md., Roland Park.—Mrs. Charles E. Dohme, 822 N. Carrollton Ave., Baltimore, Md., is having plans prepared by Walter M. Gieske, 66 Gunther Bldg., Baltimore, Md., for residence at Overhill and Keswick Rds.; white stucco on brick; 46x40 feet; red slate or tile roof; parquet and tiled floors; hardwood trimmings; hot-water heat; cost \$20,000.

Mo., Kansas City.—G. P. Tebbenkamp will erect five dwellings at 3901-09 Olive St.; stucco; cost \$1500 each.

Md., Roland Park.—Eugene Levering, president of National Bank of Commerce, 26 South St., Baltimore, Md., is having plans prepared by Edward L. Palmer, 408 Roland Ave., Roland Park, for residence; two and a half stories; frame; contractors estimating are Roland Park Company, 408 Roland Ave., Roland Park, and Gladfelter & Chambers, Parkdale and Maryland Aves., Baltimore, Md.

Mo., Kansas City.—E. S. Moser of Niles & Moser will erect residence; cost \$30,000 to \$40,000.

Mo., Kansas City.—Carl F. Gehring will erect dwelling at 3528 Wyoming St.; brick veneer; cost \$3000.

Mo., Kansas City.—A. V. Thurmond will erect stucco dwelling at 3846 Olive St.; cost \$6000.

Mo., Kansas City.—J. C. Wright, 4147 Virginia Ave., will expend \$5000 to erect duplex residence recently noted; 25x38 feet; stucco; two hot-air furnaces; gas and electric lighting; plans and construction by owner. (See "Machinery Wanted.")

Mo., St. Louis.—Anheuser-Busch Brewing Association will erect two-story store and dwelling; cost \$8500.

N. C., Hickory.—C. T. Morrison will erect residence at 5th St. and Thirteenth Ave.

Tenn., Nashville.—Miss E. Redford will erect residence; frame; cost \$4000.

Tenn., Nashville.—Bransford Realty Co. purchased property at Edgemoor and Fifteenth Aves. and will erect cheap houses;

no brick structure contemplated as recently stated.

Tex., Bay City.—Matagorda Bay Hunting and Fishing Club incorporated by C. A. Carlisle, Chicago, Ill., and others; will erect bungalow and cottages for members. (See "Miscellaneous Structures.")

Tex., Dallas.—J. Edgar Finley, 809 Praetorian Bldg., will expend \$5500 to erect dwelling; seven rooms; two stories; brick veneer; plastered walls; gas heat; electric lighting; construction under supervision of foreman; day labor. (Recently noted.)

Tex., Galveston.—Dr. W. P. Breath will erect residence at 25th St. and Avenue M.; two stories; eight rooms; cost \$4000 to \$5000.

Tex., San Antonio.—H. C. Thorman will erect four five-room cottages; cost \$4000.

Tex., San Antonio.—Dr. B. F. Smith will erect residence.

Va., Norfolk.—A. S. Gornoto opened bids to erect residence; J. D. Anders, Norfolk, is lowest bidder at \$787.

Va., Staunton.—J. H. Hubbard of Hubbard Realty Co. will erect residence; ordinary construction; hot-water heat; gas and electric lighting; cost \$20,000; bids opened January 20.

HOTELS

Fla., Clearwater.—Clearwater Bay Hotel Co. incorporated with \$50,000 capital stock by Garhardt & Gorrah; plans to erect 50-room hotel now and enlarge same later.

Ga., Jonesboro.—Henry W. Plunkett and others will erect hotel; three stories; 35 rooms.

Mo., Kansas City.—Grant Renne will erect building, upper floors of which will be used by Sexton Hotel. (See "Miscellaneous.")

Tenn., Memphis.—Martin and Joe Isela will, it is reported, erect hotel to replace Cordova Hotel; ten stories; cost not less than \$200,000.

Tex., Houston.—Almon Cotton will receive bids until January 5 through Jones & Tabor, architects, 507 Binz Bldg., Houston, to erect hotel; 10 stories; fireproof; 105 rooms, each connected with private bath. (Previously noted.)

MISCELLANEOUS

Ala., Gadsden.—Restaurant.—Chris Cormack, Attalla, Ala., will erect restaurant building; concrete construction.

Ala., Montgomery.—Stable.—Abraham Bros. will erect warehouse and stable. (See "Warehouses.")

Ark., Little Rock.—Stable.—Thalheimer & Sons, Box 826, will expend \$4000 to erect sales stable recently noted; 75x140 feet; practically fireproof; construction by owner. (See "Machinery Wanted.")

Ga., Holland.—Orphanage.—Church of Christ will expend \$3000 to erect orphanage; 40x60 feet; three stories; ordinary and mill construction. (See "Machinery Wanted.")

Ga., Waycross.—Auditorium.—Waycross Auditorium Co. will erect combined auditorium, theater and office building; seating capacity 2800 to 3000; cost \$50,000 to \$60,000.

Ky., Louisville.—Parish-house.—St. Francis Church will erect parish-house; two stories; brick; cost \$563.56. Address The Pastor, St. Francis Church.

La., Shreveport.—Natorium, Grandstand, etc.—Louisiana State Fair Association plans to erect natorium to cost \$10,000; is also considering erection of steel grandstand and coliseum to cost \$75,000.

Md., Baltimore.—Stockyards.—Baltimore & Ohio Railroad, F. L. Stuart, chief engineer, Baltimore & Charles Sts., Baltimore, Md., purchased 11 acres of land in Thirteenth District of Baltimore county; will provide new yards and shelters for cattle transportation.

Mo., Kansas City.—Store, Pool Hall and Hotel.—Grant Renne will erect store, pool parlor and hotel building at 12th St. and Baltimore Ave.; four stories; cost \$100,000; lower floor for stores; second floor for pool and billiard hall, and upper floors hotel rooms for Sexton Hotel.

Mo., St. Louis.—Dancing Academy.—H. C. Koenig, Edwin X. Koenig, Harry Trimp and Andrew Franz have plans by F. W. Koenig for dancing academy building at Grand Ave. and Victor St.; 17x108 feet; two stories; extension roof; balcony at second floor under mirror dome; dance hall 125x75 feet on lower floor, with balcony at front; floor of Honduras mahogany; rear wall of solid mirror; store room at either end of building; cost about \$145,000.

N. C., Statesville.—Sanitarium.—Dr. Long has plans by Wheeler & Stern, Charlotte, N. C., for proposed sanitarium; 60x80 feet; three stories; brick; ordinary construction; steam heat; electric lighting; plans ready in about 30 days. (See "Machinery Wanted.")

N. C., Winston-Salem.—Sanitarium.—J. A. & A. C. Bennett will complete building to be occupied by Spencer Sanitarium; about 30 rooms; steam heat; gas and electric lighting; 457-foot elevator; construction by owners. (Spencer Sanitarium recently noted incorporated with \$100,000 capital stock by Dr. W. O. Spencer and others.)

Okl., Enid.—Sanitarium.—Government Springs Sanitarium Co. will erect sanitarium; reinforced concrete; cost \$70,000; plans by R. W. Shaw, Enid.

Tex., Bay City.—Clubhouse.—Matagorda Bay Hunting and Fishing Club incorporated by C. A. Carlisle, vice-president of Studebaker Bros.; Potter Palmer, Jr.; William F. Carter, vice-president of Mercantile Trust Co., all of Chicago, Ill., and others; acquired 2000 acres of land on Matagorda Bay and Lake Austin, and will erect bungalow on Lake Austin and surround with cottages for members.

Tex., Falfurrias.—Clubhouse, etc.—Cornell-Miller Texas Farms Co., Robert H. Cornell, president Commonwealth Trust Co. Bldg., St. Louis, Mo., will erect bathhouses, boat-houses, clubhouse, garage, etc., in Brooks county, near Falfurrias. (See "Land Development.")

Tex., Houston.—Home.—Emma R. Home for Newboys is planning to erect permanent home building; Mrs. O. T. Holt is interested.

Tex., Houston.—Stable and Wagon-house.—Brown Candy & Cracker Co. will erect two-story stable and one-story wagon-house; ironclad construction; cost about \$4000; plans by H. C. Banker & Company, Houston.

Va., Norfolk.—Asylum.—Holt Street Orphan Asylum opened bids to erect proposed addition; E. L. Myers, Norfolk, is lowest bidder at \$275.

Va., Salem.—Orphanage.—Trustees of Baptist Orphanage of Virginia have plans by G. R. Ragan, Roanoke, for Baptist Orphanage, and will receive bids through Thomas I. Preston until January 15 to erect orphanage; certified check for \$500. (Recently noted.)

Va., Richmond.—Stable.—S. H. Campbell will erect store and stable building. (See "Stores.")

W. Va., Warwood.—Restaurant.—David B. Jones will erect restaurant building.

RAILWAY STATIONS

Ark., Pocahontas.—St. Louis & San Francisco Railroad, F. G. Jonah, chief engineer, St. Louis, Mo., will erect proposed passenger station; stone construction.

Ark., Pocahontas.—St. Louis & San Francisco Railroad, F. G. Jonah, chief engineer, St. Louis, Mo., will erect passenger station; stone and concrete construction.

Ark., Prescott.—St. Louis, Iron Mountain & Southwestern Railroad Co., E. F. Mitchell, chief engineer, St. Louis, Mo., will erect passenger station; 24x188 feet; brick; date of opening bids not set. (Recently noted.)

Md., Frederick.—M. A. Long, architect, Baltimore & Ohio Railroad Co., Baltimore and Charles Sts., Baltimore, states that company's plans for improvement to passenger station are not definite; is not receiving bids as recently stated.

Md., Hagerstown.—Western Maryland Railway Co., H. R. Pratt, chief engineer, Hillen Station, Baltimore, Md., will erect passenger station with connecting train sheds; pressed brick; two stories; porte cochere; bracket-supported extension roofs; 156x40 feet; cost about \$100,000.

Mo., Joplin.—I. T. Cook, Chemical Bldg., St. Louis, Mo., will erect passenger and freight depots and office building; main floor and basement to be leased by St. Louis & San Francisco Railroad Co., M. C. Byers, chief engineer operation, Springfield, Mo.; to include 40x250-foot brick depot and inbound freight shed, 24x300 feet; total cost, \$55,000; tracks will be rearranged to serve new freight and passenger depots; passenger station and office building will be 8 or 10 stories. (Previously noted.)

Mo., Webb City.—Missouri Pacific Railway System, E. F. Mitchell, chief engineer, St. Louis, Mo., will make improvements to depot.

N. C., Wilmington.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, has plans by J. F. Leitner, Wilmington, for union station and office building at Front and Red Cross Sts.; six stories; first floor for station and upper floors for offices; stone and brick; waiting-room for white passengers, 48x64 feet; waiting-room for colored passengers, 48x48 feet; will provide glass-enclosed driving space for carriages and automobiles; construct concrete bridge; granite sidewalk surrounding structure, 10 and 15 feet wide; concrete concourse, 40x200 feet; will erect umbrella sheds to replace present

shed over tracks; is awarding contracts; bids called for and will be in hand in eight or ten days; cost \$250,000 to \$300,000.

Tenn., Memphis.—Arkansas & Memphis Railroad Bridge & Terminal Co. plans to build passenger and freight stations. (See "Railway Shops, Terminals, Roundhouses, etc.")

Tex., Kingsville.—St. Louis, Brownsville & Mexico Railroad, E. C. Burgess, chief engineer, maintenance of way and construction, will erect proposed passenger station.

SCHOOLS

Ala., Guin.—City will erect county high school; two stories; fireproof construction; brick; cost \$8000; date of opening bids not set; J. A. Shaw, Mayor. (Recently noted.)

Ark., Womble.—Special School District, W. E. Womble, secretary, will erect school building to replace burned structure recently noted; 40x90 feet; ordinary construction, brick; heating, lighting, etc., not determined; cost \$6000; architect not selected. (See "Machinery Wanted.")

Fla., Orlando.—School Board plans to erect high school; W. L. Palmer, member of board.

Ga., Dublin.—Laurens county will vote January 9 on \$35,000 bond issue to erect school and for road and bridge construction; H. C. Burch, chairman Board of Commissioners.

Ga., Greenville.—Greenville School District voted \$15,000 bond issue for school improvements. Address District School Trustees.

Ga., Sparks.—Sparks Collegiate Institute will expend \$25,000 to erect dormitory; 110x93 feet; brick walls; interior, ordinary construction; electric wiring; hand elevator; plans by George C. Thompson, Candler Bldg., Atlanta, Ga.; day labor; heating, plumbing, lighting, elevator, etc.; contracts will not be let before summer. (Recently noted.)

Ga., Young Harris.—Young Harris College will rebuild college auditorium and academic building recently reported burned; cost \$16,000; M. J. Cofer, J. H. Almand, S. R. Belk and others, committee.

Ky., Danville.—Trustees of Central University, F. W. Hinit, president, is reported to erect gymnasium to cost \$25,000.

Ky., Pineville.—City will issue \$30,000 of bonds to erect school; F. A. Heath, City Clerk. (Previously noted.)

La., Columbia.—Caldwell Parish School Board, E. H. Turner, superintendent of Public Education, will expend \$12,500 to erect high school recently noted; 75x88 feet; ordinary construction; steam heat; acetylene lighting; building to contain eight classrooms; physical and chemical laboratory, principal's room, office, music, cloakrooms and superintendent's office. (See "Machinery Wanted.")

La., Independence.—J. H. Strickland, chairman of building committee, will receive bids until noon January 12 to erect two-story brick school; separate bids for plumbing and heating; certified check for \$200 with building bid and for \$50 with heating and plumbing bid; plans and specifications at office of William T. Nolan, architect, 310 Hennen Bldg., New Orleans, La.; J. H. Strickland, Independence, and office of Parish Superintendent of Education at Amite, La.; E. C. Peters, secretary of building committee. (Previously noted.)

La., Lake Charles.—City is having plans prepared by Favrot & Livaudais, New Orleans, La., for school. (Recently noted to have voted \$140,000 bond issue.)

Md., Baltimore.—Johns Hopkins University, Edward B. Mathews, secretary building committee, is having plans prepared by Carrere & Hastings, 225 Fifth Ave., New York, for one of proposed buildings at Homewood; probable cost, \$400,000.

Miss., Biloxi.—School Board plans to erect central school building; three stories; brick; auditorium on ground floor.

Mo., Webster Groves.—Webster Groves School District Trustees purchased site in South Webster Groves and will erect school; six to eight rooms; ordinary construction; heating, lighting, etc., not determined; cost \$25,000; plans are being prepared by M. C. McArdle, Chemical Bldg., St. Louis, Mo.

N. C., Salem, P. O. at Winston-Salem.—City voted \$50,000 bond issue to erect graded school. Address Salem Commissioners. (Previously noted.)

Okl., Pond Creek.—Board of Education, M. D. Sullivan, clerk, will expend \$35,000 to erect school building; 116x83 feet; fireproof; direct and indirect steam heat; plans by Smith & Parr, Oklahoma City, Okla. (Recently noted to receive bids until January 15.)

Tenn., Chattanooga.—Hamilton County Board of Education purchased site on Mis-

sion Ridge near Bragg's tower and will erect school.

Tex., Brownwood.—Texas Baptist Education Commission, D. I. Smith, president, Grandview, Tex., will erect dormitory at Howard-Payne College; cost \$40,000.

Tex., Brunner.—Brunner Independent School District voted \$30,000 bond issue to erect permanent high school, remodel and erect annex to present white school and erect negro school. Address District School Trustees.

Tex., Canadian.—Texas Baptist Education Commission, D. I. Smyth, president, will probably erect dormitory at Baptist College.

Tex., Fort Worth.—South Fort Worth School District voted \$25,000 bond issue to erect school. Address South Fort Worth District School Trustees.

Tex., Crowell.—School Board will expend \$15,500 to erect school building; 81x85 feet; plans by R. H. Parry, Sweetwater, Tex.; contract recently noted awarded to W. J. Rogers, Benjamin, Tex. (See "Machinery Wanted.")

Tex., Greenville.—Texas Baptist Education Commission, D. I. Smyth, president, Grandview, Tex., will erect dormitory at Burleson College, to cost about \$40,000.

Tex., Huntsville.—Methodist congregation will erect edifice to replace present structure. Address The Pastor, Methodist Church.

Tex., Kerrville.—St. Mary's Catholic Church, Rev. Father Kemper, pastor, will erect school, convert rectory into convent, etc. (See "Churches.")

Tex., Laredo.—School Board has not definitely determined upon plans for school building; fireproof construction; cost \$8000. L. J. Christen may be addressed. (Recently noted.)

Tex., Purdon.—Purdon School District voted \$6000 bond issue to erect school. Address District School Trustees.

Tex., San Marcos.—Southwest Texas State Normal School will open bids and let contract January 10 to erect domestic science building; 43x97 feet; three stories; mill construction; steam heat; electric lighting; cost \$25,000; plans by Behle & Boehlhaue, 228 N. Commerce St., San Antonio, Tex. (Recently noted.)

Tex., Temple.—Board of Education will erect school on Bentley Hill; two stories; brick.

Va., Linville Depot.—School Board, A. A. Howard, clerk, Harrisonburg, Va., will receive bids until noon January 15 to erect high school near Linville Station; plans and specifications at office of G. H. Hulvey.

W. Va., Pensboro.—Clay School District of Ritchie county is considering election to vote on bond issue to erect school. Address Clay District School Trustees.

STORES

Ala., Bessemer.—S. H. Kress & Co., 336 Broadway, New York, will erect store building; three stories.

Ala., Birmingham.—W. L. Sessions will erect two-story frame building on South Poplar St. between 10th and 11th Sts.; cost \$4000.

Ala., Ensley.—Tennessee Coal, Iron & Railroad Co., Birmingham, Ala., will erect proposed commissary.

Ala., Gadsden.—Mrs. F. I. Moragne will erect building to replace structure reported burned.

Ala., Montgomery.—B. S. Maulsby will erect store building; three stories.

Ala., Tuscaloosa.—Burchfield Bros. will erect four-story brick and concrete business building; fireproof construction; steam heat; electric lighting; cost \$20,000 to \$30,000; architect not selected; bids will be asked about April 1. (Recently noted.)

Ala., Montgomery.—William S. Webber and George A. Johnson will erect store building (four stories); one story; brick and sheet iron; cost \$10,000.

Ala., Ozark.—Hill & Morgan will rebuild business building; 28x30 feet; ordinary construction. (Recently noted burned.)

Ark., Little Rock.—E. D. Bracy will erect two-story frame buildings at 237 Ringo St. and 231 Ringo St.; two stories; frame; cost \$2500 each.

Fla., De Land.—William M. Fields, Jr., will erect store and office building; 26x30 feet; four stories; stores on ground floor; brick; wood finish; steam heat; electric lighting; electric elevator; architect not selected; will begin work about July 1, 1912.

Fla., Jacksonville.—R. S. Hall and associates acquired site fronting about 2000 feet on State St. and are reported as planning to erect number of business buildings. Mr. Hall personally is having plans prepared by

McClure & Holmes, Jacksonville, for brick business building at State and Clay Sts.

Ga., Albany.—F. F. Putney, president of Georgia National Bank, will erect five stores in East Albany; reinforced concrete, brick and steel; cost \$16,000.

Ga., Atlanta.—Mrs. W. R. Hawes will erect building in Druid Circle; concrete; cost \$6000.

Ga., Berlin.—Valdosta-Moultrie Investment Co., Valdosta, Ga., will, it is reported, rebuild two structures reported burned.

Ga., Savannah.—E. F. Broderick purchased building at State and Drayton Sts., and will convert into store and office building. (See "Bank and Office.")

Ga., Savannah.—Mrs. Anne C. Warner will erect store and apartment building at 40th and W. Broad Sts.

Ga., Valdosta.—S. H. Kress & Co., 336 Broadway, New York, will erect store building; two stories and basement.

La., Baton Rouge.—Doherty Hardware Co. will erect addition to building on Lafayette St.; cost \$30,000.

Mo., Kansas City.—Mrs. L. French will erect store and apartment-house at 1229 Tremont St.; brick; cost \$4000.

Mo., Kansas City.—J. H. Young will erect business building at 1219 Brooklyn St.; brick; cost \$5000.

Mo., Kansas City.—Gardner Bros. will erect store at 324-28 Woodland St.; brick; cost \$9000.

Mo., Kansas City.—Frederick Baker will erect business building at 3313-19 Broadway; brick; cost \$7000.

Mo., Kansas City.—Rothenburg & Schloss will erect wholesale building at 10th St. and Broadway; five stories; concrete.

Mo., Kansas City.—Western Improvement Co. will erect store and apartment building at 21th and Prospect Sts.; brick; cost \$4000.

Mo., Kansas City.—Grant Renne will erect store, pool hall and hotel building. (See "Miscellaneous.")

Mo., St. Louis.—Anheuser-Bush Brewing Association will erect store and dwelling; two stories; cost \$8500.

Mo., St. Louis.—M. E. Foster will erect business building at Main St. and Rusk Ave.; fireproof construction.

Mo., St. Louis.—Keyes & Marshall Bros., Realty Co., has plans by Clymer & Drischler, St. Louis, for business building on Delmar Ave. for client of Mississippi Valley Trust Co.; one story; brick; terra-cotta and glazed-glass front.

Okl., Oklahoma City.—S. H. Kress & Co., 336 Broadway, New York, is reported to erect store building on West Main St.

Okl., Tulsa.—J. O. Denton has plans for business building adjoining Oklahoma State Bank.

Tenn., Chattanooga.—Mrs. E. G. Richmond is having plans prepared by Barnwell & Jones, Chattanooga, for store building for H. Schwartz & Sons; two or three stories; front of plate glass, vitrolite and brick.

Tenn., Knoxville.—J. J. Ashe will expend \$4000 to remodel building at Gay St. and W. H. Ave.

Tenn., Martin.—L. M. Martin will rebuild drug store reported burned; loss \$10,000.

Tenn., Martin.—Jeter Bros. will rebuild structure reported burned; loss \$25,000.

Tenn., Martin.—B. E. Dodd & Son will rebuild store reported burned; loss \$25,000.

Tenn., Martin.—Bludworth Mercantile Co. will rebuild store reported burned; loss \$20,000.

Tenn., Martin.—J. W. House will rebuild store reported burned; loss about \$25,000.

Tex., Bay City.—John W. Gaines and others are reported as planning erection of \$35,000 business building.

Tex., Beeville.—Viggo Kohler will expend \$10,000 to erect business building; 142x34 feet; one story and basement; ordinary construction; electric lighting; hand-power elevator; plans and construction by owner. (Previously noted.)

Tex., Dallas.—Guy Sumpter will open bids and let contract about February 1 to erect store and office building; 76x30 feet; fireproof concrete construction; heating and lighting not decided; two electric elevators; cost \$125,000; plans by C. D. Hill & Co., Dallas. (Recently noted.)

Tex., Greenville.—C. B. Jones, W. B. Wise and M. M. Arnold are having plans prepared by George Lindsey for mercantile building; 61x100 feet; brick. (Recently noted.)

Tex., Houston.—D. R. Beatty is having plans prepared by Cooke & Co., Houston, for store and office building. (See "Bank and Office.")

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Md., Baltimore.—Cottage Apartment Co. has plans by and awarded contract to Geo. R. Morris, 46 Gunther Bldg., Baltimore, to erect apartment-house; 37x50 feet; three stories and basement; semi-fireproof construction; steam heat; electric wiring; concrete sidewalks; cost \$10,000. (Mr. Morris recently noted to erect building.)

BANK AND OFFICE

Ga., Canton.—Darnell Drug Co. awarded contract to erect office and store building. (See "Stores.")

Md., Baltimore.—Spedden Shipbuilding Co., Boston St. and Kenwood Ave., awarded contract to Piel Construction Co., 241 Arunah Ave., Baltimore, to erect store, office and warehouse building. (See "Warehouses.")

Tenn., Jellico.—First National Bank awarded contract to S. W. Easley, Williamsburg, Ky., to erect bank and office building at corner Main and 3d Sts.; three stories; stone and brick; contract price (exclusive of heating, plumbing and fixtures), \$11,490. (Recently noted.)

Tex., Amarillo.—John W. Rickett awarded contract to W. M. Rice to erect office and store building. (See "Stores.")

CHURCHES

Md., Baltimore.—Calvary Lutheran Church, North Ave. and Payson St., Baltimore, awarded contract to Charles H. Gerwig, 332 N. Howard St., Baltimore, to erect edifice; two stories; stone; slate roof; hardwood interior finish; electric lights; steam heat; contractor is receiving sub-bids; plans by Jacob F. Gerwig, Equitable Bldg., Baltimore. (Recently noted.)

Tex., Post City.—Methodist congregation awarded contract to J. M. Williams, Abilene, Tex., to erect edifice.

Mo., St. Louis.—St. Paul's Episcopal Church awarded contract to Gratiot-Wielms-Botts Construction & Realty Co. to erect edifice; cost \$20,000.

CITY AND COUNTY

Md., Baltimore.—Stable.—City awarded contract to John K. McIver, 7 Clay St., Baltimore, to erect stable for Street-Cleaning Department on Ridgely St.; plans by T. George Carroll, 1210 Continental Bldg., Baltimore.

COURTHOUSES

Fla., Brooksville.—Hernando County Commissioners awarded contract at \$42,150 to J. F. Jenkins & Co., Gainesville, Fla., to erect courthouse; plans by W. A. Edwards, Atlanta, Ga. (Previously noted. See "Machinery Wanted.")

DWELLINGS

D. C., Washington.—Dr. Alonzo O. Bliss, 35-37-39 B St. N. W., awarded contract to W. E. Speir, 35 B St. N. W., Washington, to erect residence at 1831 16th St. N. W.; stone and terra-cotta; 16 rooms and English basement; cost \$25,000; plans by Macnell & Macnell, Union Trust Bldg., Washington.

Fla., Tampa.—J. E. McElmurray awarded contract to Logan Bros., Tampa, to erect residence; two stories; frame; tile roof; 35x42 feet; plans by Bonfoey & Elliott, Tampa.

Ga., Atlanta.—A. J. Roberts awarded contract to J. A. Cochran, Atlanta, to erect two dwellings on Arizona Ave.; cost \$5,000 each.

Md., Baltimore.—Howard M. Pindell, Woodland Ave. near Pimlico Blvd., awarded contract to John Peregrino, Lyd Ave. near Thornton Ave., Baltimore, to erect cottage at Boarman and Garrison Aves.; two stories; frame; slate roof; stone foundation; 23x30 feet; cost \$3,000; plans by William A. Bennett.

Md., Baltimore.—Charles L. Kohlstead, 957 Frederick Ave. Ext., awarded contract to John C. Clark, 1034 N. Gilmer St., Baltimore, to erect two dwellings on Augusta Ave. south of Walrad Ave.; two stories; brick; 15x50 feet; tin roofs; steam heat; cost \$4,000.

Okla., Tulsa.—B. J. Burke will erect residence; two stories; cost \$4,000; 28x36 feet; frame; hot-air heat; electric lighting; contract awarded to B. F. Bossard, Tulsa.

Tex., Austin.—Mrs. Naomi Bishop awarded contract to C. W. Moor, Austin, to erect residence at 203 E. 11th St.; cost \$800.

Tex., Cameron.—Methodist Episcopal Church South awarded contract to J. A. Walston, Cameron, to erect proposed parsonage; 10 rooms; ordinary construction;

frame; plans by Associated Architects, 513 Slaughter Bldg., Dallas, Tex.

Va., Norfolk.—N. B. Joynes awarded contract to R. H. Richardson & Son (recently noted as lowest bidders), Seaboard Bank Bldg., Norfolk, at \$34,636 to erect dwelling; plans by Lee & Diehl, Norfolk.

Va., Norfolk.—Branch Johnson awarded contract to Turpin Bros., 620 Dickson Bldg., Norfolk, to erect dwelling; 35x60 feet; ordinary construction; hot water heat; cost \$5,500; plans by B. F. Mitchell, Norfolk.

Va., Norfolk.—Mrs. E. T. West has plans by and awarded contract to R. E. Raeford, Norfolk, to erect dwelling; 32x48 feet; ordinary construction; furnace; gas and electric lighting; cement sidewalks; cost \$4,500.

Va., Roanoke.—A. A. Slusher and Dr. J. C. Burks awarded contract to C. H. Powers, Roanoke, to erect dwelling; 31x45 feet; hot-water heat; electric lighting; cost \$3,000. (Recently noted.)

MISCELLANEOUS

S. C., Columbia.—Asylum.—P. J. O. Smith & Son, Spartanburg, S. C., have contract to erect proposed asylum at Dent, near Columbia; will use over 1,000,000 bricks.

SCHOOLS

D. C., Washington.—Catholic University of America, Michigan Ave. and Harewood Rd., awarded contract to Boyle-Robertson Construction Co., Union Trust Bldg., Washington, to increase height of existing tower at Michigan Ave. N. E.; five stories; cost \$60,000.

La., Jena.—Parish School Board awarded contract at \$27,000 to Caldwell Bros., Abbeville, La., to erect high school; three stories; 12 classrooms, auditorium, laboratory, etc.; steam heat; plans by Stevens & Nelson, 1109 Hennen Bldg., New Orleans, La. (Recently noted.)

Miss., Brookhaven.—City awarded contract at \$6895.20 to J. N. Tedford, Brookhaven, to erect addition to school; two stories and basement; 42x49 feet; ordinary construction; steam heat; electric lights; plans by E. McCormick, Brookhaven. (Lately noted.)

Miss., Waynesboro.—City awarded contract to Burke Bros. & Fleming, Hattiesburg, Miss., to erect school; cost \$16,000; plans by C. M. Ward, Meridian, Miss. (Lately noted.)

Mo., St. Louis.—David M. Ranken, Jr., School of Mechanical Trades awarded contract to James Stewart & Co., St. Louis, to erect administration building; three stories; brick and granite; three sections, one 83x193 feet and two 49x113 feet; 38 rooms; cost \$225,000; plans by Eames & Young, St. Louis. (Lately mentioned.)

Tex., Bay City.—Bay City Independent School District awarded contract to Von Der Haar & Osborn (not Osborn & Van Der Haar as recently reported), Box 723, Bay City, to erect school building; contract price, \$16,365. (See "Machinery Wanted.")

STORES

Ark., Russellville.—O. Osborn, Dr. G. McKinnon and E. Horky have plans by and awarded contract to W. L. Scarlett, Russellville, to erect proposed store buildings; cost \$18,000.

Ark., Russellville.—W. J. White awarded contract to F. Scarlet to erect business building; 40x60 feet; mill construction; elec-

tric lighting; cost \$5,000 to \$6,000. (Recently noted.)

Fla., Tampa.—H. G. Warner awarded contract to Harry Livie, Tampa, to erect stores and garage. (See "Motors and Garages.")

Fla., Tampa.—H. Levick has contract to erect number of stores on Franklin, Washington and Whiting Sts. and Florida Ave.; one story at first; foundations to support additional stories. (A. J. Barney of Springfield, Mass., recently noted to erect stores at above location.)

Fla., Tampa.—H. G. Warner awarded contract to H. Levick, Tampa, to erect block of store buildings; one story; brick; one portion 60x120 feet, other 52x105 feet; cost \$30,000. (Recently noted.)

Ga., Canton.—Darnell Drug Co., Charles T. Darnell, manager, awarded contract to Mackie-Crawford Construction Co., 221 Grant Bldg., Atlanta, Ga., to erect proposed store and office building; two stories and basement; 35x60 feet; drug store on ground floor; offices above; reinforced concrete; cost \$12,000.

Md., Baltimore.—Spedden Shipbuilding Co., Boston St. and Kenwood Ave., awarded contract to Piel Construction Co., 241 Arunah Ave., Baltimore, to erect store, office and warehouse building. (See "Warehouses.")

Miss., Gulfport.—J. A. McAllister has plans by and awarded contract to N. Thomas, Box 504, Gulfport, to erect store building; 40x100 feet; fireproof; steam heat; electric lighting; asphalt sidewalks; hand elevator; cost \$3,000. (Previously reported burned.)

Tex., Amarillo.—John W. Rickett awarded contract to W. M. Rice, Amarillo, to erect store and office building; 60x120 feet; two stories and basement; ordinary construction; steel frame; steam heat; electric lighting; cost \$27,000; plans by D. P. Kaufman & Son, Amarillo. (Mr. Rice recently noted to have contract.)

Va., Portsmouth.—J. R. Parrish awarded contract to R. H. Richardson & Sons, Hampton, Va., to erect business building; brick; cost \$18,500.

THEATERS

La., New Orleans.—Mrs. A. Smith awarded contract to Louisiana Building Contracting Co., New Orleans, to alter and repair moving-picture theater at 417 St. Charles St.; cost \$3,000.

Mo., St. Louis.—H. G. Frohase & Sons, 7300 Virginia Ave., awarded contract to Gratiot-Wielms-Botts Construction & Realty Co., St. Louis, to erect theater at Virginia Ave. and Bowen St.; white stucco front; fireproof construction; cost \$15,000; plans by C. J. Gratiot, St. Louis.

Va., Phoebus.—Albert Johnson awarded contract to Louis N. Mears, Hampton, Va., to erect theater to replace burned American Theater; brick; fireproof; 35x110 feet; hot-water heat; electric lights; cost \$800. (Lately noted.)

WAREHOUSES

Md., Baltimore.—Spedden Shipbuilding Co., Boston and Kenwood Ave., awarded contract to Piel Construction Co., 241 Arunah Ave., Baltimore, to erect store, office and warehouse building; 25x75 feet; ordinary construction; three stories; brick; two-story fireproof vault. (Recently noted.)

Va., Richmond.—Virginia-Carolina Hardware Co. awarded contract at \$19,500 to Slaughter & Perlin, Richmond, to erect warehouse at 1320 E. Main St.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Eufaula.—J. P. Foy of Eufaula, president of the Eufaula & Chattahoochee Valley Railroad Co., is reported saying that an engineer has been engaged to make survey and estimates for the line from Eufaula to Pittsview, about 20 miles, and that it will be completed within six months.

Ala., Fayette.—Basket Bros. are reported building a railroad from Fayette down Sipsey River to get out timber.

Ala., Gadsden.—H. G. Palmer of Yorkville, Ill., representing Orth & Butterfield of Chicago, has, it is reported, made an engineering investigation of the route for the proposed railroad of Louis Hart to run from Gadsden to Bellevue Heights and Lookout Mountain.

Ark., Fort Smith.—The Kansas City Southern Railroad, according to a local report, contemplates building a line to St. Louis. C. E. Johnson is chief engineer at Kansas City, Mo.

Ark., Harrison.—The St. Louis, Arkansas & Pacific Railway Co. is the new name just granted to the Harrison Mineral Belt Railway Co., and its authorized capital is increased from \$80,000 to \$2,080,000. The proposed line is from Harrison to Fallsville, Ark., 40 miles, with a branch from Jasper to Pontiac, Mo., 50 miles. J. H. Kuder of Harrison, Ark., is secretary.

Ark., Marianna.—The Missouri Pacific Railway has completed over 6½ miles of its line from Marianna to the St. Francis River. The rest of the cutoff, about 39 miles, from the river to West Memphis, Ark., will be completed in 1912. The List & Gifford Construction Co. and the Kansas City Bridge Co., both of Kansas City, Mo., are the contractors.

Fla., Crystal River.—The Crystal River Rock Co. is reported pushing construction of its railroad to Lees Mount.

Fla., Bagdad.—The Stearns & Culver Lumber Co. of Bagdad is reported to have issued nearly \$1,000,000 of bonds to build a logging

Tex., Rockdale.—J. W. Perry will erect store and office building; 29x90 feet; two stories; iron and glass front; brick and iron clay walls; heaters; electric lighting; cost \$2,000; construction by owner. (See "Machinery Wanted.")

Tex., San Antonio.—G. A. Stowers is reported as considering erection of business building; 10 stories; finished with white brick.

Tex., San Benito.—San Benito Land Co. will erect store and office building; light-colored brick; two stories; lower floor for stores; upper floor for offices.

Tex., Taylor.—Peter Schramm and Fritz Benni will erect brick business building on Main St.

Tex., Teague.—W. L. Holder, San Antonio, Tex., will remodel business building; two stories; 50x90 feet; second story to be improved and used as theater; ordinary construction; architect not selected.

Va., Richmond.—S. H. Campbell will erect store and stable building at 1816-18 E. Franklin St.; two stories; brick; cost \$8,000.

Va., Richmond.—M. M. Straus will expend \$8,000 to alter and repair building at 207 N. Foushee St.

W. Va., Charleston.—Payne & Melton are reported as to erect business building to replace church building at Virginia and McFarland Sts.; J. M. Payne is having plans prepared by Mr. Montgomery, Charleston, to remodel livery building opposite above site for business building and will erect two-story business building adjoining.

THEATERS

Ma., Mobile.—Walter Mitchell will remodel building on Dauphin St. for moving-picture theater; cost \$2,000.

Ga., Waycross.—Waycross Auditorium Co. will erect combined theater, auditorium and office building. (See "Miscellaneous Structures.")

Ky., Louisville.—Ideal Amusement Co. organized by Fred J. Dolle, Henry Reiss and others; will erect moving-picture theater at 2315 W. Market St.; brick; fireproof; 80x150 feet; stage 32x28 feet; 42 exits; seating capacity 1,400; construction to permit converting into air dome in summer; cost about \$50,000.

Miss., Hattiesburg.—Moellere & Lomann will remodel Lomo Theater.

Tex., Galveston.—G. K. Jorgensen is reported as planning erection of summer theater.

Tex., Teague.—W. L. Holder, San Antonio, Tex., will make improvements to building; second story to be remodeled as theater; architect not selected. (See "Stores.")

WAREHOUSES

Ala., Montgomery.—Abraham Bros. will erect warehouse and stable at Tallapoosa and Moulton Sts.; two stories; brick and concrete; about 50x100 feet; cost \$20,000.

Fla., Fort Lauderdale.—Parks Commission Co., incorporated by P. D. Parks and others; will erect warehouse.

Ga., Acworth.—Jesse L. Lemon will rebuild cotton warehouse. (Recently reported burned.)

Ga., Fort Valley.—Fort Valley Cotton Mills will erect cotton warehouse; "L" shape; 60x150 feet; brick division walls; mill construction; composition roofing; cost \$4,000; plans by Frank R. Happ, Macon, Ga.

Ga., Rome.—J. A. Glover and Mrs. Mary Lee Hight purchased site on 1st St., 85x132 feet, and will probably erect warehouse; 55x127 feet; cement; plans not definite; architect not selected.

Ky., Mayesville.—Independent Tobacco Warehouse Co., incorporated with \$20,000 capital stock by W. W. Ball, Benjamin Longnecker, W. W. Ball, Jr., and George A. Longnecker.

Ky., Mayesville.—Planters' Loose-Leaf Tobacco Warehouse Co. changed name to Farmers & Planters' Loose-Leaf Warehouse Co. and increased capital stock from \$25,000 to \$100,000; purchased Farmers' loose-leaf tobacco plant for \$60,000.

S. C., Walterboro.—Farmers & Merchants Warehouse Co., incorporated with \$25,000 capital stock by H. H. Rentz, J. D. Risher and J. E. Peurifoy.

An Augusta Architectural Firm's Expansion.

L. A. Bellonby of Augusta, Ga., has taken into the architectural firm with him C. L. Whaley, and the firm in the future will be known as Bellonby & Whaley. The offices are located in the Irish-American Bank Bldg., where a suite of offices is occupied.

railroad through its timber lands in Santa Rosa and Walton counties.

Fla., Wakulla.—The Woodville Railroad Co. has completed one mile of line from Wakulla to Wanita on its line from Wakulla to Crawfordville, Fla., 10 miles.

Ga., Bostwick.—Perino Davis and Hughes Bros. are reported to have the contract for extending the Greene County Railroad (formerly the Bostwick Railroad) 7 miles from Bostwick to Goodhope, Ga. From there it is to be further extended to Monroe and Loganville, and at the other end from Apalachicola to Sparta, Ga. Forest Greene of Atlanta is president, and W. D. Branan of Bostwick, Ga., vice-president and general manager.

Ga., Cary.—The Cary North & South Railroad Co. is reported to have let contract from Cochran to Danville, Ga., 18 miles, construction to begin soon and to be completed by July next. H. R. Brown is president and D. B. Dunn, chief engineer, both at Macon, Georgia.

Ga., Elberton.—Ira L. McCord of New York is reported to have the contract for construction of the Elberton & Eastern Railroad from Elberton to Tignall, Ga., 21 miles, on which construction is reported begun.

Ga., Kingsland.—Capt. L. Johnson of St. Mary's, Ga., president of the Atlantic, Waycross & Northern Railroad Co., says that the proposed extension is from Kingsland to Fort Valley, Ga., 200 miles. Contracts have not been let. Survey made.

Ga., Ocilla.—The Ocilla Southern Railroad Co., which is building an extension from Fitzgerald to Rochelle, Ga., 24 miles, has applied to the Secretary of State for an amendment of charter to increase capital from \$150,000 to \$1,000,000. J. A. J. Henderson, Ocilla, Ga., is president.

La., Milliken.—Incorporation of the Milliken & Southwestern Railroad Co. to build a line from Milliken southwest is reported at Lake Providence, La.; W. E. Hyde, president; the other directors being C. E. Hyde, C. W. Hyde, L. H. Brothers, E. O. Johnson and H. Schadt of Arkansas City, Ark., and South Bend, Ind.

La., New Orleans.—The Frisco System, it is reported, contemplates enlarging the New Orleans Terminal Station by closing the street between Basin and Rampart Sts. It is estimated that the addition will cost more than \$500,000. F. G. Jonah, St. Louis, Mo., is chief engineer of construction.

Md., Baltimore.—The Western Maryland Railway has decided to issue \$10,000,000 of 5 per cent. notes dated January 1, 1912, and to mature in 3½ years, the proceeds to be used for enlargement of terminal and other facilities, which may be needed to handle increased business from the Connellsville extension. Already, it is announced, \$5,000,000 of the notes have been sold in New York. H. R. Pratt, Baltimore, Md., is chief engineer.

Mo., Rolla.—The Missouri, Arkansas & Gulf Railroad Co. is reported to have filed a mortgage to secure \$1,600,000 of 5 per cent. 30-year bonds with the St. Louis Union Trust Co. as trustee to provide for building its proposed line from Rolla to Bakersfield, Mo., 125 miles. Grading reported under way from Rolla to Willow Springs, about 75 miles. Gilbert Lay is president and W. E. Finke, secretary, at Rolla, Mo.

Mo., Springfield.—The Missouri Pacific Railway Co. says that a preliminary survey was made by it some years ago between Springfield and Bagnell, Mo., but no construction work was done, nor is any being considered at this time. This refers to a recent report.

Mo., St. Louis.—The Burlington system is preparing to build team tracks on the east side of N. 2d St. in the 900 block. W. L. Breckinridge is engineer in charge of maintenance of way at Chicago, Ill.

N. C., Bailey.—A surveying and engineering company has been organized for incorporation, says a letter to the Manufacturers Record, to survey railroads, highways, etc. Sanford Wilson, Bailey, N. C., may be addressed.

N. C., Greensboro.—The North Carolina Public Service Co. is reported to have completed its extension to Pomona, four miles from Greensboro.

N. C., Red Springs.—The Pembroke, Red Springs & Northern Railroad Co. has been incorporated to build a line from Red Springs to connect at Pembroke with the Seaboard Air Line, 12 miles. Authorized capital, \$75,000, with \$12,000 subscribed. Incorporators: J. L. McMillan, W. J. Johnson, C. G. Vardell, Paisley McMillan, J. G. Williams and J. Dickson McLean, all of Red Springs, N. C.

Okla., Hammon.—M. M. Cooke, Wichita Falls, Tex., is chief engineer of the Wichita

Falls route, including the Wichita Falls & Northwestern Railway, which is building from Hammon toward Woodward, Okla.

Okla., Miami.—The Vinita Blue Flint, Chat & Gravel Co., which has applied for charter, contemplates, it is said, the construction of a railroad. Address, Miami, Okla.

Okla., Muskogee.—The Missouri, Oklahoma & Gulf Railroad is reported securing right of way for its contemplated extension from Wagoner, Okla., to Joplin, Mo. J. J. Harrison is chief engineer at Muskogee, Okla.

Tenn., Chattanooga.—H. C. Fonde, general agent of the Southern Railway at Knoxville, is reported saying that the company will make improvements in Chattanooga if the King St. ordinance now before the City Commission is passed. It is desired to extend tracks and make a larger freight station. W. H. Wells, Washington, D. C., is chief engineer of construction.

Tenn., Harriman.—The Harriman & Morgan Railroad Co., recently chartered to build a line to coal fields in Morgan and Scott counties, starting near Oliver Springs, has organized as follows: C. E. Hendrick, president; J. N. Baker, vice-president; Robert B. Cassell, secretary and treasurer, the other directors being W. J. Clark and J. R. McDowell. Construction is expected to begin in January.

Tenn., Iron City.—The Empire Lumber Co. of Pittsburgh, Pa., it is reported, will build a railroad from a connection with the Louisville & Nashville Railroad to timber lands in Wayne county. J. E. Willoughby, chief engineer of construction of the Louisville & Nashville, Louisville, Tenn., may be able to give information.

Tenn., Memphis.—The Illinois Central Railroad will, it is reported, elevate its tracks at the Iowa Ave. subway in Memphis. A. S. Baldwin, Chicago, Ill., is chief engineer.

Tenn., Memphis.—The Arkansas & Memphis Railway, Bridge & Terminal Co. has applied for charter to build another bridge across the Mississippi River; also new terminals. The Chicago, Rock Island & Pacific Railway is behind it. J. T. Harahan, former president of the Illinois Central Railroad, is quoted saying that it will also be interested and that \$10,000,000 will be spent. Incorporators, J. T. Harahan of Chicago; J. T. Reichman, C. Hunter Raine, E. E. Wright and E. L. Mallory of Memphis. J. B. Berry, Chicago, Ill., is chief engineer of the Rock Island lines.

Tex., Brownsville.—Tracklaying is reported begun upon the motor-car line of the St. Louis, Brownsville & Mexico Railway between the Rio Grande depot and the international bridge.

Tex., Hillsboro.—Reported that the Missouri, Kansas & Texas Railway will build second track from Hillsboro to Granger, Tex., 96 miles. A. M. Acheson is chief engineer at Dallas, Tex.

Tex., Pecos.—Reported that the Pecos Valley Railroad will build an extension to Fort Davis, Tex. W. L. Carville is president.

Tex., Riviera.—Theodore F. Koch is quoted saying that a railroad will be built from Riviera, on the St. Louis, Brownsville & Mexico Railway, to Riviera Beach, construction to begin immediately.

Tex., San Antonio.—A. L. Matlock of San Antonio, vice-president of the San Antonio, Rockport & Mexican Railways Co., sends information that construction will begin in February on a line from San Antonio southward via Crowther to a point on the Rio Grande, near Mission, Tex., with a branch from Crowther southeast to Rockport and Harbor Island, which is near Aransas Pass. Construction immediately in prospect is 370 miles. It is also proposed finally to build from San Antonio northwest to San Angelo, Tex., about 175 miles, and from near Mission to Tampico and Mexico City, making altogether about 200 miles of road in Texas and in Mexico. Contractors have given bond and are now procuring and assembling material. English capital, represented by Edward Cowper-Thwait, engineer of London, is said to be behind the plan. Other officers are R. R. Russell, president; J. H. Halle, treasurer; Butler L. Knight, secretary, the directors including S. A. Hopkins, John T. Reeves, H. W. Quinan, J. W. Davidson and W. A. Lowe.

Tex., San Benito.—The San Benito & Rio Grande Valley Railway Co., which will build in 1912 about 50 miles of new line, has already constructed road thus: San Benito to Hull, Tex., about 12½ miles; San Benito to Boulevard Junction, Tex., about 19½ miles; Los Indios Junction to Hendricks, Tex., about 1¼ miles; total, 33½ miles. Proposed work for which all contracts are let is thus: Los Indios Junction to Santa Maria, Tex., 9½ miles; Santa Maria to Mission, Tex., 20

miles; Mission to Monte Christo, Tex., 18½ miles; total, 48 miles. The company also intends to build from Landrum to Brownsville, Tex., 22 miles. S. A. Robertson is trustee at San Benito, Tex.

Tex., Tioga.—J. P. Mason, president of the Tioga Traction Co., says it is preparing to begin construction at an early date. Other officers are A. K. Bradley, first vice-president; E. E. Ledbetter, second vice-president; A. J. Scott, secretary; J. L. Webb, assistant secretary, and Z. L. Wright, treasurer.

Va., Norfolk.—The Norfolk & Western Railway is reported buying land at Lamberts Point for additional yard facilities. C. S. Churchill, Roanoke, Va., is chief engineer.

W. Va., Friendly.—Reported that survey will begin early in January for an electric railway from Friendly to Williamstown. The Board of Trade may be able to give information.

W. Va., Beckley.—The Chesapeake & Ohio Railway, it is reported, has begun preparations to build extensions which, in connection with existing track, will furnish a loop line through coal fields from Jenny's Gap via Mahan and Mullens along Laurel Fork to Oceana, and thence into Logan county, connecting with its line there not far from Logan Court House. R. B. Burks is acting chief engineer of construction at Richmond, Va.

W. Va., Gardner.—W. N. Sharp, general manager of the Bluestone Land & Lumber Co., referring to the report that it is building a railroad from Gardner to timber lands on the Bluestone River, says it is only extending its logging road.

W. Va., Romney.—The Baltimore & Ohio Railroad, it is reported, has bought the Hampshire & Southern Railroad and will extend it. F. L. Stuart, Baltimore, Md., is chief engineer of the B. & O.

STREET RAILWAYS

Ark., Argenta.—The Argenta Street Railway Co. is reported to have completed plans for extensive improvements, including extensions, work to begin next spring.

Ark., Texarkana.—The Texarkana Gas & Electric Co. contemplates an extension of the Rose Hill car line to Westmoreland Pl. W. L. Wood, Jr., is general manager.

Fla., Jacksonville.—The Jacksonville Electric Co. is reported contemplating an extension of the Hogan St. line and will double-track its Riverside line on St. John's Ave. Hardy Croom is manager.

Ky., Louisville.—The Board of Public Works will sell franchises January 12 for the cross-town car line and the double track on Bardstown Rd. Presumably the Louisville Railway will purchase them and build the lines. T. J. Minery is president.

N. C., Wilmington.—The Tidewater Power Co. of Wilmington, says a report, will build a concrete trestle over Banks Channel, double-track the line from Nolan's to Winter Park, 1½ miles, and make other improvements. A. B. Skelding is general manager.

Tex., Corpus Christi.—The Corpus Christi Street & Interurban Railway has been granted a franchise to build an extension of about two miles in the South Bluff section. V. S. Heintz is secretary.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Air Compressors.—O. R. Whitney, 29 Cortlandt St., New York, wants two electric-driven air compressors; capacity 175 to 200 feet of air per minute working against a pressure of 100 pounds; alternating current, three-phase, 60 cycles; any good make will answer.

Adding Machines.—Dr. Martin Dalton, Fenton, Mo., wants prices on adding machines.

Aluminum Castings.—Burgess Patent Tire Manufacturing Co., Brookfield, Mo., wants aluminum castings.

Bank Fixtures.—Walter D. Collins, Denison, Tex., wants cuts, blds, etc., on bank fixtures with marble front and top, mahogany desks, marble wainscoting and general bank-room equipment.

Bank Furnishings, etc.—George H. P. Cole, Roanoke, Va., wants prices on burglar-proof safe, safe deposit boxes, vault door, bank furniture and fixtures.

Barrels.—J. O. Mallard, Greeleyville, S. C., wants to correspond with barrel manufacturers.

Bell.—See "School Furnishings."

Belting.—See "Shafting and Belting."

Blackboards.—Von Der Haar & Osborn, Box 723, Bay City, Tex., wants prices on blackboards.

Blackboards.—See "School Furnishings."

Boiler.—Columbus Engineering & Equipment Co., 490 Neilson St., Columbus, O., wants 1200 to 1500-horse-power water-tube boiler; standard make.

Boiler.—Pearl Milling Co., R. S. Moore, secretary, Stony Point, N. C., wants prices on boiler.

Boilers.—Consolidated Furniture Works, Altavista, Va., in market for two 70-horse-power boilers; good second-hand preferred.

Bottles, etc.—W. M. Kennedy, Jr., 8 Weakley Ave., Memphis, Tenn., wants addresses of manufacturers of bottles, tubes and small jars.

Brick.—Caldwell Parish School Board, E. H. Turner, Superintendent of Public Education, Columbia, La., wants prices (f. o. b. cars Columbia) on 168,000 rough hard pressed and 75,000 red pressed bricks.

Building Materials.—J. F. Jenkins & Co., Gainesville, Fla., want prices on building materials, including electric wiring, etc., for courthouse at Brooksville, Fla.

Building Materials.—Wheeler & Stern,

Charlotte, N. C., want prices on slate roof, maple floors, tile floors, skylight and plumbing.

Building Materials.—Doherty Hardware Co., Baton Rouge, La., wants to correspond with manufacturers of building materials.

Building Materials.—Klotz & Lee, 526 Gunter Bldg., San Antonio, Tex., wants prices on building materials for postoffice building at Maryville, Mo.

Building Materials.—Von Der Haar & Osborn, Box 723, Bay City, Tex., want prices on building materials, including metal ceiling, plumbing, metal shingles, metal laths, iron lathes, glass, etc.

Building Materials.—George H. P. Cole, Roanoke, Va., wants prices on building materials, including galvanized cornice work and cement for vault and floor.

Building Materials.—N. B. Coogan, Tryon, N. C., wants data and prices on building materials.

Building Materials.—S. W. Wise, 19½ Liberty St., Cumberland, Md., wants prices on stone, terra-cotta, copper, electrical conduit and mill work; marble, reinforced concrete, cement floors, structural steel, plumbing, vault doors, interior trimmings, hardware, face brick, roof tiling and electric fixtures for United States postoffice at Frostburg.

Building Materials.—J. A. Aperson, 503 Empire Bldg., Atlanta, Ga., wants prices on metal windows, plumbing, vault doors, composition roofing, steel box chutes (heavy dimension), framing, post caps, bases, wall boxes, hangers, electric wiring, elevators, fire-escapes, cut stone (B grade), flooring and ceiling.

Building Materials.—Augustus Hampson, 207 St. Paul St., Baltimore, Md., wants prices on 40,000 iron-spot face brick, 450,000 red, arch and salmon brick (run of kiln), frames, sash, doors and blinds, lumber, lime, hair, cement, plaster, sand, excavating, flooring, laths, hardware, roofing, tin, felt, pitch, slag, plumbing, glass, etc.

Building Materials.—Moore Construction Co., Charleston, W. Va., wants bids on building material, including tile, marble, iron, steel, plastering, painting, glass, etc., for \$125,000 hotel at Lynchburg, Va.

Cars.—See "Mining Equipment."

Canning Machinery, etc.—American Pickle & Canning Co., P. H. Roberts, man-

ager, Wiggins, Miss., will open bids January 15 for sugar-cane syrup machinery, conveyors for canning and hominy machinery, can-making machinery, canning equipment and electric-light generator and supplies.

Castings.—See "Aluminum Castings."

Caskets.—See "Wagons, Buggies, etc."

Castings.—Southern Steel Products Co., Richmond, Va., wants addresses of manufacturers of heavy casting who can furnish 23 mooring cleats for river wharf; dimensions, 21-inch base, 9-inch neck; extreme height, 12 inches; extreme length, 42 inches.

Chimes.—Methodist church, Rev. W. D. White, pastor, Navasota, Tex., wants to correspond with manufacturers of chimes.

Crescoting Plant.—Norton Hardwood Co., Richey, Miss., wants data and prices on crescoting plant.

Dam and Pipe Line.—American Pipe & Construction Co., A. H. Kneen, assistant general superintendent operating department, Norfolk, Va., requests bids on hauling about 600 tons of 24-inch wood and about 1600 tons of 16-inch cast-iron pipe; laying about 24,000 feet 24-inch wood and about 28,500 feet 16-inch cast-iron pipe; constructing earth dam on North Landing River; location, 7 to 12 miles east of Norfolk. Copies of drawings and specifications may be had upon application to A. H. Kneen on depositing certified check for \$5 for each set of plans.

Desks.—See "School Furnishings."

Drain Tile.—J. A. Harps, care of J. A. Harps Manufacturing Co., Greenfield, O., will want field drain tile for use at Pineview, N. C.

Drykilns.—See "Sawmill Machinery, etc."

Dust Down.—J. O. Mallard, Greeleyville, S. C., wants literature on dust down manufacture.

Electric Capstans.—Proposals, endorsed "Proposals for electric capstans," received at Bureau of Yards and Docks, Navy Department, Washington, until 11 A. M. January 27, and then opened, for two electrically-driven capstans for Navy-yard, Norfolk, Va. Specifications can be obtained on application to bureau or to commandant of navy-yard named. R. C. Hollyday, Chief of Bureau.

Electrical Equipment.—See "Building Materials."

Electric-light Plant.—See "Water-works Construction."

Electric-light Plant and Water-works.—Sealed proposals received by Boyce Ficklen, Jr., City Clerk, Washington, Ga., until noon January 29 (extended date) for constructing power plant, adding to present water-works and overhauling and extending electric-light and power-transmission system, in accordance with plans and specifications drawn by Westinghouse, Church, Kerr & Co., engineers, New York, and on file in office of clerk; copies of plans, etc., obtainable from clerk upon deposit of \$50; amount refunded upon return; specifications divided into two parts, main and supplementary; bids as follows: A. Furnish material and construction; this bid divided into two parts, one to cover main specifications and other supplementary specifications. B. Construction of building and foundations, but not to include machinery or construction of transmission lines. C. Installation of machinery and construction of transmission lines, but not to include construction of building and foundations for machinery; this bid shall have separate bids called for under main and supplementary part of specifications; certified check for 5 per cent. of amount of bid; bonds in recognized company and approved by engineers.

Electrical Machinery.—See "Canning Machinery, etc."

Electrical Machinery.—Minea Light & Ice Co., C. M. Dozin, manager, Mineola, Tex., wants to purchase motors and two transformers.

Electrical Machinery.—See "Mining Equipment."

Electroplating Machinery, etc.—N. A. Bartholomew, 159 Edgewood Ave., Atlanta, Ga., wants addresses of manufacturers of or dealers in electroplating machinery and supplies.

Elevators.—See "Building Materials."

Elevators.—J. C. Wright, 447 Virginia Ave., Kansas City, Mo., wants prices on elevators.

Engines.—See "Gasoline Engines, etc."

Engine.—Columbus Engineering & Equipment Co., 490 Nelliston St., Columbus, O., wants 1200 to 1500-horse-power Corliss engine (tandem or cross-compound), with condenser.

Engine.—Ivey Manufacturing Co., Hickory, N. C., in market for second-hand 80 90-horse-power Corliss engine.

Engine.—Pearl Milling Co., R. S. Moore, secretary, Stony Point, N. C., wants prices on engine.

Engine.—San Benito Cotton Gin Co., P. O. Box 256, San Benito, Tex., in market for new or good second-hand Corliss engine, 18x36 or 18x42. Proffers should give complete description and full particulars, with best prices, in first letter.

Excavating Machinery.—South Texas Engineering Co., W. B. Renn, president, First National Bank Bldg., Houston, Tex., wants catalogues on excavating machinery.

Excavating Machinery.—O. R. Whitney, 39 Cortlandt St., New York, wants second-hand Parsons trench-digging machine; complete in every detail; full particulars, location and prices f. o. b. point of delivery requested by first mail.

Fiber Cloth.—Burgess Patent Tire Manufacturing Co., Brookfield, Mo., wants automotive fiber cloth or canvas.

Fire-escapes.—See "Building Materials."

Foundries.—See "Plowshares."

Furnace, etc.—Augustus Hampson, 267 St. Paul St., Baltimore, Md., wants prices on furnace and range.

Furniture.—See "Wagons, Buggies, etc."

Gasoline Engines, etc.—South Texas Engineering Co., W. B. Renn, president, First National Bank Bldg., Houston, Tex., wants catalogues on gasoline and steam engines.

Gasoline Launch, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. January 8 for furnishing gasoline launch, steel cable, sheet brass cocks, valves, pipe fittings, nuts, chisels, files, claw bars, blacksmiths' punches, carpenters' braces, back-saw frames, hinges, locks, tacks, rakes, sledge handles, machetes, tallow pots, solder, steel tapes, life preservers, chalk line, mop heads, marine, cotton waste, metallic hose, packing, belt lacing, soap, creosote oil, linseed oil, sienna, metallic brown, etc. Blanks and general information relating to this circular (No. 679) may be obtained from this office or offices of assistant purchasing agents, 21 State St., New York; 614 Whitney-Central Bldg., New Orleans; also from U. S. Engineer offices in Chicago, St. Louis, Mobile and Galveston; Commercial Club, Kansas City. P. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Glass.—See "Bottles, etc."

Glove Machinery, etc.—Geo. B. Waggoner, Jane Lew, W. Va., wants information relative to establishment of factory for cotton gloves, blouses and overalls (cost, sales, profits, etc.); also prices on machinery.

Heating Plant.—S. W. Wise, 19 1/2 Liberty St., Cumberland, Md., wants prices on steam-heating plant for United States post-office at Cumberland.

Heating Plant.—J. A. Aperson, 803 Empire Bldg., Atlanta, Ga., wants prices on heating plant.

Heaters.—Church of Christ, Holland, Ga., wants prices on heaters for \$3000 orphanage.

Heating Plant.—George H. P. Cole, Ronoke, Va., wants prices on heating plant.

Heating Plant.—J. F. Jenkins Co., Gainesville, Fla., want prices on heating plant for courthouse at Brooksville, Fla.

Heating Plant.—School Board, Crowell, Tex., will want heating plant for \$15,500 school building.

Interior Decoration.—See "Bank Fixtures."

Ice-cream Machinery.—J. W. Perfater, Box 306, Tallahassee, Fla., wants addresses of manufacturers of or dealers in equipment to manufacture ice cream in large quantities.

Laundry Machinery.—Wm. S. Rhodes, civil engineer, office of superintendent of construction, Fort Screven, Ga., wants to correspond with manufacturers of laundry machinery.

Lentheries.—See "Manufactured Articles."

Lead.—Baltimore (Md.) Board of Awards will receive bids until 11 A. M. January 10 for furnishing and delivering to Water Board at Gay St. yard, Gay and Wolfe Sts., 50 tons (2000 pounds per ton) of Omaha pig lead; specifications for lead may be obtained from Water Engineer, third floor, City Hall; certified check \$500; Ezra B. Whitman, Water Engineer.

Levee Construction.—Fourche Drainage District, William M. Kavanaugh, president, Little Rock, will receive bids until 2 P. M. January 30 for construction of about 300,000 cubic yards river protection levee along Arkansas River and Fourche Bayou; will also receive bids at same time for clearing about 500 acres along Fourche Bayou; specifications will be ready January 10; Lund & Hill, engineers, Little Rock.

Lightning Rods.—Bailey Mills Co., Victoria, Tex., wants catalogues and prices on lightning rods and appurtenances.

Lock Gates.—U. S. Engineer Office, Room 325 Custom-house, New Orleans, La. Proposals for constructing lock gates in inland waterway between Vermilion Bay and White Lake will be received until 11 A. M. January 24. Information on application. Lansing H. Bach, Lieutenant-Colonel, Engineers.

Manufactured Articles.—S. Saunatoz, Commission Representation, Athens, Greece, wants to correspond with manufacturers of printing and writing paper; chaki for uniforms; benzine for motor cars; crayons; motor cars; pianos; gum for Turkish leucoumes (starch); hohogoni (Tabasco, Cuban and San Domingan); cloth for furniture; ladies and gentlemen's clothing; leathers and soles for boots; stoves; gold and diamond imitations; cloth for umbrellas; also any other article salable in eastern district of Europe (Greece, Turkey) and Asia Minor, etc.; prices f. o. b. Piraeus.

Metal Shingles, etc.—People's Hardware Co., J. A. Fuller, sales manager, Camden, Ala., wants prices on metal shingles, metal siding and ceiling.

Metal Roofing, etc.—Sterling Cotton Mills, Franklinton, N. C., in market for galvanized and plain metal roofing, siding, shingles, etc.

Metal-working Machinery.—American Pickle & Canning Co., P. H. Roberts, manager, Wiggins, Miss., will open bids January 15 on can-making machinery. (See "Canning Machinery, etc.")

Mining Equipment.—Harian Coal Co., Board of Trade Bldg., Louisville, Ky., will consider bids on conveyor, tippie equipment, electric plant, air plant, mine cars, steel rail, screens, gasoline motors, copper wire, etc., for Kentucky plant.

Motor Cars.—See "Manufactured Articles."

Organs.—Methodist church, Rev. W. D. White, pastor, Navasota, Tex., wants to correspond with manufacturers of pipe organs.

Overall Machinery.—See "Glove Machinery, etc."

Paving.—W. M. Rawlings, City Clerk, Ponca, Okla., will receive bids until 5 P. M. January 8 for construction of four blocks, 10,000 square yards brick block paving and 2800 linear feet combined concrete curb and gutter, together with necessary drains, etc.; certified check \$2000; for further information address City Clerk.

Paving.—Street Commissioners, H. B. Everett, president, Binghamton, Tenn., will receive bids until 2 P. M. January 9 for construction of 28,734 square feet concrete sidewalk, 9337 linear feet curb, 4960 feet gutter, 1400 cubic yards excavation, 19,700 square yards gravel and 200 feet 24-inch and 250 feet 36-inch soil pipe; certified check 3 per cent. of cost of work; information and blank proposal forms furnished on application to Harry N. Pharr, engineer, 536 Randolph Bldg., Memphis, Tenn.

Paving.—City Commissioners, S. H. Sprout, Jr., president, Tuscaloosa, Ala., will receive bids until 10 A. M. January 9 for construction, repair or paving of certain sidewalks, curbing and combined curbing and guttering; 5500 square yards cement sidewalk; 1200 linear feet curb and gutter (36-inch gutter); 8900 linear feet curb; C. H. Ohme, City Engineer.

Paving.—J. K. Skipwith, Mayor, Bastrop, La., will receive bids until noon January 15 for construction of concrete walks as follows: 1358 linear feet 8-foot walk, 600 linear feet 7-foot walk, 3335 linear feet 6-foot walk, 19,738 linear feet 4-foot walk and 376 linear feet 4-foot crossings; specifications on file with Mayor; bids to be accompanied with good security or cash deposit of \$100.

Pianos.—See "Manufactured Articles."

Piping, etc.—Sealed bids received at office of Board of Water Commissioners, Macon, Ga., until 8 P. M. January 25 for furnishing f. o. b. cars, Macon, about 1125 tons 20-inch, 300 tons 12-inch, 380 tons 10-inch, 176 tons 8-inch, 1280 tons 6-inch, all class "B" cast-iron piping, together with 150 tons special castings, in accordance with specifications on file in office of board, which can be had upon application; commissioners reserve right to fix definitely quantity of pipe; usual rights reserved. Bids must be sealed and addressed to board and marked "Bids for Piping;" W. H. Fetner, chairman.

Planing-mill Machinery.—See "Sawmill Machinery, etc."

Plowshares.—John S. Peterson, R. No. 2, Lost Springs, Kans., wants to correspond with manufacturers of farm implements relative to placing contracts for making plowshares.

Plumbing.—See "Building Materials."

Plumbing.—See "Building Materials."

Printing.—W. M. Kennedy, Jr., 8 Weakley Ave., Memphis, Tenn., wants to correspond relative to having pamphlets, booklets, etc., printed.

Printing Press.—Augusta Crate Co., H. C. Lorick, president, 935 Broad St., Augusta, Ga., wants new or second hand wood printing press.

Pump.—Pearl Milling Co., R. S. Moore, secretary, Stony Point, N. C., wants prices on pump.

Pumps.—J. J. Groetken, Tulsa, Okla., wants to let contract for manufacturing duplex hand pump, crated ready for shipment.

Pumps.—South Texas Engineering Co., W. B. Renn, president, First National Bank Bldg., Houston, Tex., wants catalogues on pumps.

Rails.—See "Mining Equipment."

Rails.—W. A. Cannon Company, El Paso, Tex., wires Manufacturers Record as follows: "Want delivered price at either Farwell, Tex., or Texico, New Mexico, on 40-pound relaying rails for 33 miles of standard-gauge track, including bolts, spikes and angle plates. Bidders will give shipping point and guarantee of condition of rails, but fittings may be new material; bids to be mailed us at El Paso."

Range.—See "Furnace, etc."

Safe, etc.—Dr. Martin Dalton, Fenton, Mo., wants prices on safe and other bank fixtures.

Safe.—See "Bank Furnishings, etc."

Saw.—Ivey Manufacturing Co., Hickory, N. C., in market for band resaw of medium capacity.

Sawmill, etc.—Hammond Lumber Co., Hammond, La., will install sawmill machinery, complete planing mill and drykilns.

School Furnishings.—Special School District, W. E. Womble, secretary, Womble, Ark., will want 125 to 150 double school desks, large bell, 800 square feet of blackboard and other school equipment.

Sewer Construction.—City of Cameron, Mo., will open bids 8:30 P. M. January 5 for construction of 12,280 feet of 8-inch sewer, 36 manholes and 3 flush tanks; deposit, \$500; plans and specifications on file with Clarence Staples, City Clerk.

Shafting and Belting.—Rogers Chemical Co., F. L. Wallin, president, Rogers, Ark., wants prices on shafting and belting for carbon-decomposer plant.

Shoe-shop Equipment.—Presbyterian Orphans' Home, Rev. W. T. Walker, superintendent, Barlum Springs, N. C., wants to correspond with dealers in equipment, including tools and supplies, for shoe shop.

Shuttle-block Machinery, etc.—Southern Express Co., Pascagoula, Miss., wants to correspond with manufacturers of and dealers in shuttle blocks and shuttle-block machinery.

Store Front.—J. W. Perry, Rockdale, Tex., wants iron and glass front for store and office building.

Sickle-factory Equipment.—Edm Kovalef & Sons, Vladimir Government, Russia, want to purchase machinery for making sickles (curving) for bending sickles, cutting teeth in them and for polishing and sharpening; also work bench for shaping and finishing handles; also desires information relative to best method of tempering sickles.

Sprinkler System.—J. A. Aperson, 803 Empire Bldg., Atlanta, Ga., wants prices on automatic sprinkler system.

Stable Equipment.—Thalheimer & Sons, Box 826, Little Rock, Ark., want box stall, iron wire troughs, iron feed racks and other equipment.

Steel-plant Engineers.—W. T. James, James Bldg., Chattanooga, Tenn., wants to communicate with designing and contracting engineers for small steel plant.

Steel Rack and Tables.—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 9, and opened immediately thereafter, for furnishing and installing at Naval Academy, Annapolis, Md., steel rack and tables. Applications for proposals should refer to schedule 4195. Blank proposals furnished upon application to navy pay office, Baltimore, Md., or to the bureau. T. J. Cowie, Paymaster-General, U. S. N.

Stencil Machinery.—O. K. Carswell, care of Downing Company, Brunswick, Ga., wants machine to manufacture tin stencils for making barrels.

Stoves.—People's Hardware Co., J. A. Full-

ler, sales manager, Camden, Ala., wants prices on stoves.

Tanks.—Rogers Chemical Co., F. L. Wallin, president, Rogers, Ark., wants prices on 20,000-gallon or two 10,000-gallon steel tanks similar to tank cars for storage; one 2000-gallon and 1 300-gallon capacity tanks; also 100-gallon mixing tank with paddles on vertical shaft.

Vacuum Cleaners.—J. C. Wright, 4147 Virginia Ave., Kansas City, Mo., wants prices on vacuum cleaners.

Vault Doors.—See "Bank Furnishings, etc."

Wagons, Buggies, etc.—People's Hardware Co., J. A. Fuller, sales manager, Camden, Ala., wants prices on wagons, buggies, furniture and caskets.

Water Meters.—N. G. Smith, South Hill, Va., wants prices on water meters.

Water-works.—See "Electric-light Plant and Water-works."

Water-works.—Proposals received by Mayor and Aldermen, Johnson City, Tenn., until 7 P. M. February 1 for furnishing material, machinery and labor for building gravity water supply; about 12½ miles of

16-inch cast-iron pipe, with appurtenances; one-half mile of 18-inch, one-eighth mile of 10-inch cast-iron pipe line, and one 4,000,000-gallon reservoir; plans at office of City Commissioner or consulting engineer; specifications obtained from either; certified check for 5 per cent. of bid; usual rights reserved; Wm. E. Ponder, Recorder; J. B. McCrary Company, consulting engineer, Third National Bank Bldg., Atlanta, Ga.

Water-works Construction, etc.—City of Hammon, Okla., receives bids January 11 for water-works and electric-light plant construction; Western Engineering Co., consulting engineer, 703 American National Bank Bldg., Oklahoma City, Okla.; bond issue \$17,500 for water-works and \$3500 for electric-light plant.

Wheel Rims.—Burgess Patent Tire Manufacturing Co., Brookfield, Mo., wants wheel rims.

Wire Springs.—Burgess Patent Tire Manufacturing Co., Brookfield, Mo., wants coil wire (helical) springs.

Wireworking Machinery.—Noble Machine Co., Fort Wayne, Ind., in market for machinery to weave wire around slats for patent poultry coop.

tary, and W. G. Nims, assistant treasurer. Four of the nine directors are officers of the Union Twist Drill Co., the second largest machine factory in Athol. The latter company becomes a stockholder of the Starrett Company, and as such is represented on the board of directors.

Agent for Railway and Mill Equipment.

The Railway & Mill Equipment Co. of New Orleans has established offices in the Whitney-Central Bldg. of that city, and has made arrangements with the leading manufacturers of various lines with the view of handling promptly inquiries for any of the products which the company handles. These include locomotives, passenger cars, freight cars, tank cars, logging cars, steam shovels, dredges, pile drivers, locomotive cranes, railroad equipment of all kinds, shop machinery, hydraulic pumps, steel cables, mill supplies and contractors' specialties.

Remarkable Increase in Sales of Hydraulic Brick.

An increase is reported of over 40 per cent. for the sales of hydraulic pressed brick in 1911 over that of 1910 by the Hydraulic Press Brick Co., Colorado Bldg., Washington, D. C. This statement applies particularly to the shipments of the company to the seaboard States of the South. In view of the large volume of business done in 1910 this showing is phenomenal and demonstrates the growing popularity of high-grade hydraulic brick. Among the large orders recently closed are those for the facing for the new Savannah Hotel, Savannah, Ga.; the Madison St. School, Richmond, Va.; Atlantic Trust & Banking Co. Bldg., Wilmington, N. C., and the Banner Bldg. at Greensboro, N. C.

Opening a Bond and Investment Department.

Robert Garrett & Sons, bankers, Continental Bldg., Baltimore, have opened a bond and investment department under the management of Herman A. Tingley, for several years the representative in Baltimore of F. J. Lisman & Co., bankers, of New York. A full line of municipal, railroad, public utility and industrial bonds will be carried, suitable for banks, trust estates and individual investors. They furnish information in regard to their own and other securities and are also prepared to execute orders for the purchase or sale of securities.

Business Trip of the Vice-President of the Goulds Manufacturing Co.

An extensive trip in the interests of the Goulds Manufacturing Co. is being made by W. E. Davis, vice-president, in charge of sales. He expects to visit the company's representatives in Boston, New York, Philadelphia, Richmond, Pittsburgh, Wheeling, Cleveland, Warren, Cincinnati, Louisville, Chicago, St. Louis, Kansas City, Joplin, Memphis, Birmingham, Montgomery, Mobile, New Orleans, Beaumont, Houston, Galveston, San Antonio, El Paso, Phoenix, Tucson, Albuquerque, Los Angeles, San Francisco, Portland, Seattle, Tacoma, Boise, Salt Lake City, Denver and Omaha.

Recent Sales of Refrigerating Machinery.

Recent sales by the Vilter Manufacturing Co., Milwaukee, of machinery to Southern purchasers include the following: To the Arkansas Short Leaf Lumber Co., Pine Bluff, Ark., a 24x42-inch Corliss Engine; Washington Market Co., Washington, D. C., a 75-ton refrigerating machine; Anheuser-Busch Brewing Association, St. Louis, 6100 feet of two-inch piping; Citizens' Ice Co., San Antonio, Tex., a 185-ton refrigerating machine with 24x48-inch Corliss engine; Winnfield Ice & Cold Storage Co., Winnfield, La., a 55-ton refrigerating machine with 15x30-inch Corliss engine.

Addition to the Gallon Iron Works Co.'s Plant.

As a result of the success attained in the past year and of its rapidly-growing business the Gallon Iron Works Co. of Gallon, O., has recently decided to construct an addition to its present plant. This addition will be 150x60 feet, two stories high, adjoining the present factory, which will then be 520 feet long. This company was organized in February, 1907, and by July 4 the buildings had been erected, and on that date the first metal was poured in the foundry of the new industry. The growth of the company has been substantial and steady until it has become recognized as one of the leading manufacturers of road-building machinery, cast-iron culverts and corrugated pipe. At a recent meeting the following officers were elected: H. Gottdiener, president; Frank Faber, vice-president; G. L. Stiefel, treasurer, and D. C.

Boyd, secretary and general manager. E. L. Beaver, formerly with the Kelly road machine company of Springfield, O., is assistant to Sales Manager Beck of the Gallon company.

The Allyn Engineering Co., Consulting Engineer.

The Milwaukee Corrugating Co. of Milwaukee has appointed the Allyn Engineering Co. of Cincinnati as consulting engineer for its work. Plans are now being prepared by the Allyn company, in its capacity as consulting engineer, for several buildings, including a large office building, machine shop and power building, and a main shop 234 feet by 500 feet. Most of these buildings are to be of metal frames, requiring 800 tons of structural steel. This company has branch offices in the Old Colony Bldg., Chicago; at 59 Church St., New York, and at Chattanooga, Tenn.

The James Walker Company.

The James Walker Company has been organized, with offices at 123-125 Light St., Baltimore, and intends to develop trade throughout the entire South. This company is entering the field as manufacturer, manufacturers' agent and jobber of marine hardware in all its branches, besides carrying an extensive and complete stock of shipbuilders', contractors', lumbermen's and fishermen's supplies, as well as batteries, coils, spark plugs, etc. It is a new organization, but its members are experienced. James Walker, its president, having been buyer and sales manager for 15 years for Wm. H. Whiting & Co. of Baltimore, while R. G. Mowbray, treasurer, was cashier and credit man for 10 years for the Whiting firm. Several others connected with the new organization have had years of experience in this branch of industry.

The Camden Mill Co. Doubles Its Capacity.

Machinery has been ordered which when installed will double the capacity of the mill of the Camden Mill Co., Camden, Ark. This company manufactures sash and doors, and with the increased capacity a general line of screen goods will be manufactured, also grained doors designed to take the place of veneered doors. The company has a well-equipped plant, and with this increased capacity will be in position to secure a large share of the trade throughout the country. One of its specialties is a screen for either windows or doors made with a vertical reinforced strengthening of the screen which is worked in while the wire cloth is being woven. A sample has been put up in neat form for convenience in mailing when requested. A reorganization of the company was recently effected, at which time B. C. Rockwell, formerly of Malvern, Ark., was made president and general manager.

The Atlantic Turpentine & Refining Co.'s Expansion.

A large turpentine refining plant has just been completed at Savannah by the Atlantic Turpentine & Refining Co. for refining the products of its wood-distilling plants. This company has a tract of 20 acres at Savannah, with track connections with practically every railroad entering Savannah. A large wood-distilling plant is to be erected shortly, and altogether an investment of about \$200,000 will be made at that location. This company has in operation at Mt. Pleasant, Ga., an extensive wood-distilling plant, representing an investment of about \$300,000, including the land. This business has been gradually built up during the past five years until it now includes an extensive trade in all portions of this country, as well as abroad. The company utilizes what is practically a waste product in the South, such as fat-pine stump and resinous wood that is found on all cut-over areas in the long-leaf pine belt. The general offices are at 164 Front St., New York. The officers of the company are Clarence E. Weaver, president; B. H. Baker, vice-president, and E. U. Gardner, secretary and treasurer.

Expansion of the Miami Machine Co.

Plans for a consolidation of the Miami Valley Machine Tool Co., Dayton, O., and the Stiles Manufacturing Co., Parkersburg, W. Va., have been consummated and an organization under the name of the Miami Machine Co. effected by the election of the following officers and directors: P. P. H. Conover, president, Dayton, O.; James Turpin, vice-president, Dayton, O.; G. L. Camden, secretary and treasurer, Parkersburg, W. Va.; directors, Samuel D. Stiles and Robert G. Stiles, Parkersburg. The Miami Company has for a number of years been building 14-inch and 16-inch standard engine lathes, sensitive drills and tool-grinding machines. As its

INDUSTRIAL NEWS OF INTEREST

Wants to Establish a Planing Mill.

L. B. Hughes, 241 W. Main St., Salem, O., writes that he is looking for a location where a small lumber yard and planing mill may be successfully conducted. He would like to correspond with persons interested in obtaining such a plant for their city.

The Monarch Telephone Manufacturing Co.'s New Location.

The Monarch Time Systems and the Monarch Telephone Manufacturing Co. have removed from 929 Chestnut St. to the Philadelphia Bourse, exhibition department. The address is the Monarch Time Systems, the Bourse, Philadelphia.

Wants Agency for Power Plant Equipment.

Being in close touch with the principal sources of demand for power-plant equipment in Baltimore and nearby cities, Granville Smith, care of Universal Stone Co., Eager St. and Northern Central Railroad, Baltimore, Md., writes that he would like to hear from manufacturers of such equipment desiring an agent in this territory.

To Manufacture High-Grade Cutlery.

The plant of the Tidloute Cutlery Co., Tidloute, Pa., successors to Booth Bros. of Sussex, N. J., has equipped its plant at Tidloute with the necessary machinery to manufacture high-grade cutlery. C. W. Booth, formerly of Booth Bros., is the general manager. Other officers of the company are John P. Sage, president; E. O. Piquinot, vice-president; L. G. Heath, treasurer; Fred R. Dennis, secretary.

Manufactures Cottonwood Fiber.

The Cottonwood Fiber Co. has been organized with offices at 1023 Holland Bldg., St. Louis, Mo. It manufactures wood fiber for plaster mills, using cottonwood exclusively. Wood fiber is used where gypsum is employed in the preparation of plaster, taking the place of hair and to a certain extent the place of sand for adding bulk to the mixture. The company has one mill in operation already and is planning for extensive future development.

Position Wanted by a Business Manager.

A business man who has been in the South for about three years, and who is at present assistant secretary and treasurer of an important industrial enterprise, advertises in our columns for a position promising permanent connection in an office, financial or managerial capacity. He states that he has a thorough knowledge of business, banking, insurance, railroading and commercial law and economical office systems.

A New Book Page Finding Device.

An ingenious plan for finding immediately the page number in any book, ledger, journal or record of any sort has been devised by the Instantaneous Page Finder Co., St. Louis, Mo. The page finder may also be applied to any manuscript compilation. Any page numbered in multiples of 10 can be turned to with one operation, and any other page may be found with a second operation, so that no more than two motions are required to find any page. The company is planning to place its device before book-makers and book users. It has been very successful in attracting and holding atten-

tion wherever it has been exhibited. Chas. R. Fife, Pierce Bldg., St. Louis, Mo., is secretary and treasurer of the company.

Using Dynamite in Tree Planting.

Instead of using spades to dig holes in which transplanted trees are to be set, White Davis, Park Commissioner, St. Louis, is using dynamite. The workmen drive a two-inch pipe into the ground, fill it with dynamite and light the fuse. The downward explosion makes a suitable hole for transplanting the tree, and, besides, loosens up the soil to a considerable depth, which permits the roots to extend out much better and deeper than with the hole dug with a spade.

Special Opportunities in Winchester, Va.

Mr. J. E. Correll, secretary of the Business Men's Association, Winchester, Va., advertises in this issue the special opportunities afforded by that city, which is described as the center of one of the greatest apple developments in the United States. These opportunities are for cannery, evaporating and preserving plants, spray material, spray wagons and orchard equipment plants. A brick plant is also needed. Winchester is located on the Baltimore & Ohio Railroad and the Pennsylvania Railroad. Full information will be furnished by Mr. Correll on request.

Manufacturing Plant for Sale or Lease.

A three-story brick, mill-constructed building with 42,000 square feet of floor space, equipped with elevator, electric-light plant, steam heat and modern plumbing is noted in our advertising columns for sale or lease by H. M. Bentell, Atlanta, Ga. This building is located on a lot of two acres with 600 feet railroad frontage on the Southern Railway and the A. B. & A. R. R. at Bellwood Ave., Atlanta. This property is suitable for manufacturing plant or a warehouse.

Subsoiling with Explosives.

The Jefferson Powder Co. of Birmingham, Ala., has established its Southeastern offices in Greenville, S. C., with C. M. W. Rand in charge. All of the company's business in the Carolinas will be attended to from this location. One of the main lines of work that will be carried on by the Greenville office will be the giving of subsoil demonstrations, which have attracted so much attention since the greatly increased crop returns from the use of explosives in subsoiling have been brought to the notice of agricultural interests.

The L. S. Starrett Company Increases Its Capital Stock to \$3,500,000.

An increase in the capital stock to \$3,500,000 has been made by the L. S. Starrett Company of Athol, Mass., one of the largest establishments in the world for manufacturing fine mechanical tools. This company was incorporated in 1900, succeeding to the business established by L. S. Starrett in 1880 and conducted by him individually up to the time of its incorporation. The capital stock was \$100,000 in 1900, since which time the business has increased to such an extent that it has been found necessary to greatly increase it. The officers of the company are L. S. Starrett, president; F. A. Ball, vice-president; F. E. Wing, treasurer and secre-

business has continually increased from the time of the company's organization, it has become necessary for it to seek larger quarters than its plant in Dayton afforded. Under the consolidation the new company will continue manufacturing its line of lathes, sensitive drills and tool-grinding machinery, and will immediately add additional sizes of lathes. The Stiles Manufacturing Co., Parkersburg, has been in operation for some time, and has a large foundry and machine and pattern shop in connection with its plant, and is making several specialties in woodworking machinery. The management of the new company will be under the direct charge of Mr. Conover, who has been connected with the Miami Valley Machine Tool Co. for the past five years, and of Mr. Camden of Parkersburg. All of the officers and directors of the company have been connected with this line of business and will give their assistance toward the building up of the new plant. As both plants have been running full capacity for the past few years, with the proposed additions to the line already being built the new company, owing to its greater facilities for manufacturing, will be in a position to handle the increasing business advantageously.

TRADE LITERATURE.

The Goulds Series of Bulletins on Power Pumps.

The various types of power pumps built by the Goulds Manufacturing Co., Seneca Falls, N. Y., are described and illustrated in the series of bulletins from No. 100 to 109, inclusive. These bulletins have been noted in these columns as they were issued by the Goulds company. Bulletins 106 to 109 refer, respectively, to vacuum and stuff pumps; deep-well triplex pumps; deep-well working heads, and pumps for special services. They are all conveniently arranged for filing, and, taken together, form a complete exposition of pumping equipment for practically every service.

Holiday Greetings Received.

Christmas and New Year's cards from the following have been received in addition to those previously acknowledged in these columns: The Bourbon Copper & Brass Works Co., Cincinnati, manufacturer of fire hydrants and stop valves, water-works and fire department supplies, wrought-iron pipe, fittings, etc.; the Baltimore Maryland Engraving Co., 28 S. Charles St., Baltimore; the Life Insurance Co. of Virginia, Richmond; the H. W. Clark Company, manufacturer of the Clark Meter Box, Mattoon, Ill.; the Chicago Portland Cement Co., manufacturers of the "Double A" cement, Chicago; an illustrated wall card with an appropriate inscription from Nicholson File Co., Providence, R. I.

Andrews Bank and Office Furniture and Fixtures.

In order to be attractive to customers as well as of convenience to the working force of banks, banking corporations strive to have a perfect style of interior equipment in which nothing useful or ornamental is too good. The necessary expenditure for this result is considered a wise and profitable investment when the prestige, facility for transacting business and other advantages are considered. A booklet published by the A. H. Andrews Company, 115 S. Wabash Ave., Chicago, designers and manufacturers of bank furniture and equipments, contains views of many bank interiors and other public buildings, offices, etc., in which it has supplied the cabinet work, metallic grille, bronze and marble work. A long list of

banks and public buildings throughout the country in which its work may be seen is included in the booklet.

Attractive Calendars for 1912.

In addition to the calendars for 1912 previously noted in these columns the following have been received: A desk calendar issued by Irwin N. Megargee & Co., Inc., paper manufacturers, Philadelphia; a hanging memorandum pad and calendar combined, issued by Samuel H. French & Co., Philadelphia, manufacturers of paints and French's specialties for builders, also agents for Dexter Portland cement; a long panel lithograph of "The Stockman Bride," with calendar, published by the National Stockman and Farmer, weekly newspaper, Pittsburg; one from the Asphalt Ready Roofing Co., manufacturer of roofing materials, 9 Church St., New York; a large wall calendar from the Stone Printing & Manufacturing Co., Roanoke, Va., who make a specialty of poster 12-sheet calendars, of which this one is a sample; a vest-pocket card calendar issued by Keuffel & Esser Company, manufacturer of mathematical instruments, surveying instruments, drawing materials, etc., 127 Fulton St., New York; a wall calendar from the Dahlstrom Metallic Door Co., Jamestown, N. Y., manufacturer of the well-known Dahlstrom fireproof products; a large loose-leaf calendar from the Whitin Machine Works, Whitinsville, Mass., with a separate sheet for each month, each sheet illustrating a different one of the various machines built by this manufacturer of cotton-mill machinery, for which Stewart W. Cramer is the Southern agent, at Charlotte, N. C.

Victor J. Evans & Co., Patent Attorneys.

The great success attending the business of Victor J. Evans & Co., patent attorneys, Victor Bldg., Washington, D. C., is reflected in the fact that this company occupies a building constructed at an expense of \$150,000 by the company, which is said to be the most perfectly equipped office building in the country devoted exclusively to the patent business. This building is illustrated and several views of offices, drafting department, specification department, etc., are shown in a pamphlet issued by the company for distribution to interested persons. The methods of operating and carrying on the business, which have proven so advantageous to persons seeking patents through this company, are fully described in the pamphlet. The entire force of experts and specialists employed is under the personal supervision and direction of Victor J. Evans, who has had over 20 years' experience in the patent business. This firm has helped a number of inventors through the certificate of patentability which it issues, to secure financial assistance while the patent is being obtained. This certificate is issued after thorough search of the United States Patent Office records. In order to fully cover the great fields of invention, a number of patent lawyers and mechanical experts are employed for their special knowledge and ability in special lines of invention. It is through these specialized experts that this firm is able to effectively protect the many inventions submitted to its care. The refund system of this firm, founded upon careful search of patent-office records, for which the fee is returned in case the patent is not secured, coupled with the expert services in the preparation and prosecution of its patent applications, has resulted in a business of great volume and successful results. A list of seventeen reasons is given in which the company explains its advantages and why it is and should be patronized.

was noted recently when the management of the Hotel Belmont, New York, sent an order for a quantity of coal to H. L. Herbert & Company, stating that for various reasons the delivery should be made quickly. The Herbert company put its three big "Commer" trucks, built by Wyckoff, Church & Partridge, Inc., New York, to work in the morning, and before the day was over these three trucks had put into the hotel 240 tons of coal. The trucks made thirty-three trips during that day, one of them delivering 94½ tons. It is stated that these three "Commers" during the first 19 days of December delivered 2700 tons of coal. This included long and short hauls, and covered the period of heavy snowfall, with its attendant crippling of horse deliveries.

Extensive Improvements in the National Showcase Co.'s Plants.

With the view of increasing its facilities so that its capacity may be practically doubled for next season, the National Show Case Co., Columbus, Ga., has under way extensive improvements in its present plants. This company manufactures distinctive show cases, bank, store, drug and office fixtures. Its progress in recent years has been notable. Four catalogues have just been issued for distribution, showing the advance 1912 models. The company extends the services of its expert designers to purchasers to help in arranging plans for the various fixtures needed. James A. Lewis is president of the company and J. H. Dimon is secretary and treasurer.

The Reliability of Motor Trucks.

A remarkable example showing the reliable work which motor trucks are capable of performing was recently furnished by an "Alco" truck, which ran 144 hours without a stop of the motor. This occurred in the deliveries made by the Adams Express Co. in Philadelphia during the week previous to Christmas Day, when the 3½-ton truck hauled more than 1200 boxes and barrels, weighing in the aggregate over 450,000 pounds. The driver made 814 stops through the week, and the total valuation of merchandise handled is estimated at more than \$300,000. The greatest number of packages collected in a single day was 315, during a trip in West Philadelphia, on which day the valuation in merchandise hauled was estimated at \$89,420. Early in the week the truck was principally engaged in hauling large loads from the depots to the distributing stations. Later in the week the truck worked between the main stations of the company and the large downtown wholesale and retail houses, and was then shifted over to deliveries in the suburbs. In all this work the truck maintained schedules. During the entire tour of duty the truck performed about every form of work imaginable in an express company's duty, and did it without a stop of its motor or a delay from any other cause within the truck. At the end every part was working with complete success and satisfaction, and will need no overhauling. In the consumption of fuel the truck proved economical. The records show that one gallon of gasoline was used on the average per hour of service, while it required one quart of oil every six hours on the average. "The truck, running night and day, is more valuable than any six teams of horses we have," said an official of the express company's transportation department; "while by motor we can haul 120,000 pounds in 24 hours, we cannot expect to exceed 20,000 pounds with a team of horses. The truck hauls three times as much goods in the same time, and works from two to three times as long."

Motor Trucks Becoming Indispensable.

In addition to the heavier trucks, motor delivery wagons ranging in capacity from 500 pounds to 1500 pounds and light power trucks of one ton to one and one-half tons capacity, all designed and built with the object of bringing them within the reach of retailers, small manufacturers and others doing a limited business, are engaging the attention of many makers of commercial motor vehicles this season. These machines, besides being inexpensive, are simple in construction and economical in operation and upkeep. Heretofore the heavy trucks have occupied the most serious attention of the engineer and designer, probably because big manufacturing companies and department stores have been leaders in the adoption of power vehicles, and their needs were met by the three-ton and five-ton trucks and by electric wagons. Successful use of these machines by such prominent concerns for a number of years, together with the increasing cost and difficulty of maintaining horse service, has developed a widespread demand among smaller companies for machines of less capacity. Tradesmen in all sorts of lines are

growing eager to adopt the quicker and better transportation by motor wagon. The development of this demand is being anticipated by many men in the commercial vehicle industry. A considerable number of established makers who have specialized in large trucks are turning their attention now to smaller machines. At the same time many new companies have organized and begun the manufacture of the smaller models. This tendency will be very noticeable at the Grand Central Palace Automobile Show in New York January 10 to 17. Of over 30 exhibitors of business vehicles many will be new to the general public, and most of them will display one or more models of light wagons. Simplicity of construction and operation, together with low selling price, will appeal to hundreds of show visitors who go to inspect the new commercial cars. Machines selling at from \$300 to \$1800 promise to be in the majority, with a few models, including tri-car parcel carriers, at less than the lower figure, and numerous examples of two-ton, three-ton and five-ton trucks at prices from \$2500 to \$5000. Never before has the small merchant had anything like the choice of delivery wagons and light trucks suited to his needs that he will find presented in that exhibit. Nearly 100 motor trucks and delivery wagons will be displayed. The aggregate load capacity of the various models that will be grouped together in the hall is about 350,000 pounds, and the total retail value of the machines is well over a quarter of a million dollars.

Southwest Pass Opened.

[New Orleans Times-Democrat.]

"The announcement made Tuesday by Lieut.-Col. Lansing H. Beach, Corps of Engineers, U. S. A., that the Southwest Pass of the Mississippi River is open to commerce marks an event of surpassing interest, not only to the city of New Orleans, but to the entire valley of the 'Father of Waters' and the adjacent country," said Assistant Engineer Cornelius Donovan yesterday.

"Although the channel is not yet in a completed state, there are inquiries from the commercial world if vessels of greater draft than have ever entered the Mississippi River may enter now. The question was answered when, April 18, 1911, the steamship Indian of the Leyland Line, by special permission, went through this pass drawing 30 1-3 feet, and was the deepest draft vessel that ever left the port of New Orleans.

"This pass might have been opened to commerce some time ago, but as South Pass was quite adequate to the demands of commerce, and as the use of Southwest Pass would materially interfere with dredging operations there, the opening of the latter was postponed until such time as commerce called for greater facilities.

"The Southwest Pass, from its head to the ends of the Jetties, is 19½ miles in length, and with the exception of three localities, aggregating one and one-half miles in length, there is a depth of water varying from 35 to 88 feet. The present controlling depth is 32 feet, and is in the newly made channel, which is gradually, but surely, developing increased depth.

"For the information of the layman, it may not be amiss to state that at the mouth of a sediment-bearing river, like the Mississippi, there is a barrier, known as a bar, which is formed when the waters of the river discharge into the Gulf or sea. Then it is that the waters spread out over a large area and the velocity of current decreases to such an extent that it will no longer bear its burden of sediment. In consequence it is dropped and the barrier to commerce is formed. Where the water is confined between its banks there is a deep channel, and, therefore, banks are what are required.

"If nature would but build banks far enough in advance there would be no bars to obstruct navigation, but it was left to man, the engineer, to discount nature by placing artificial banks (jetties) across these shoals, and ending in deep

MOTOR TRUCK AND TRACTOR NEWS

Advertising Manager of the White Company.

Announcement is made by the White Company, manufacturers of automobiles and motor trucks, Cleveland, O., of the appointment of James A. Harris, Jr., of the sales department as advertising manager.

Repeat Orders for Lauth-Juergens Trucks.

Repeat orders for motor trucks by discriminating users form recommendations that are highly appreciated by motor-truck builders. As an example of this feature in the sales of Lauth-Juergens motor trucks the Katz Mattress Co. of Chicago has recently placed its third order for two two-ton trucks built by the Lauth-Juergens Motor Car Co. of Fremont, O. This company manufactures one, two and three-ton gasoline

motor trucks with bodies to suit any line of business in which they may be required.

"Commers" Motor Trucks for Coal Deliveries.

In few lines of business is promptness more appreciated at this season than in the delivery of coal. In bad and slippery weather the satisfactory hauling of heavy coal loads is practically impossible on the smooth city streets with horse-drawn equipment, and criticism is heard on all sides because of delayed deliveries. The public is annoyed at a time when it most needs fuel. Stormy, cold and snowy weather paralyzes horse delivery. At such times the superior value of a modern motor truck for delivery purposes asserts itself to any observing person. Snowdrifts, slush and ice do not stop it. Deliveries are prompt and sure, and also cheaper to the owner of the truck than any horse delivery system. An example of this service

water, then the action of the current, thus confined, aided by dredging, removes this barrier, consisting of millions of tons of sediment from between the jetties, leaving a deep channel, and distancing nature many years in the matter of bank building.

"The jetties at Southwest Pass consist of mattresses constructed of a framework of scantling which confines willow brush thoroughly compressed, and these are of different widths and sunk along the lines of the jetties, one on top of the other, until the superstructure is brought to the surface of mean high water. On top of this superstructure is then placed a concrete capping which is four and one-half feet above mean high water."

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,
Baltimore, Md., January 3.

In the Baltimore stock market during the past week there was a fair amount of business, notwithstanding the New-Year holiday. In the trading United Railways common sold from 18 3/4 to 19 1/4; do. income bonds, 61 1/2 to 62; do. funding 5s, 86 1/2 to 87; do. scrip, 88; do. notes, 5s, 99 1/2; United Railways 4s, 85 1/2 to 86; Consolidated Gas, Electric Light & Power common, 95 1/2 to 96; do. preferred, 100 to 101; do. 4 1/2s, 88 1/2 to 89; Consolidated Gas 5s, 109; do. 4 1/2s, 97 1/2 to 98; Seaboard Air Line common, 24 1/2; do. preferred, 48; Seaboard Company common, 25 1/2 to 26; do. second preferred, 64 1/2; Seaboard 4s, stamped, 88 1/2 to 89 1/2; do. adjustment 5s, 82 1/2 to 83; Mt. Vernon-Woodberry Cotton Duck 5s, 76 1/2 to 77 1/2; G. B. S. Brewing incomes, 3 1/4; do. 4s, 35 1/2 to 36 1/2.

Bank stocks sold as follows: Mechanics', 30 1/2 to 31; Union, 136; Western, 39; First National, 138 1/2; Exchange, 160; Farmers and Merchants', 51.

Maryland Trust preferred sold at 115 to 116; Maryland Casualty, 91 1/2; Mercantile Trust, 147 to 148; Continental Trust, 225 to 226; Colonial Trust, 27 1/4; United States Fidelity, 182.

Other securities were traded in thus: Atlantic Coast Line of Connecticut, 264 1/2 to 265 1/2; Atlantic Coast Line convertible debenture 4s, 101 1/2 to 101 3/4; do. Consolidated 4s, 95 to 95 1/4; do. South Carolina 4s, 95 1/2; Baltimore City 4s, 196 1/2 to 197; do. 5s, 1916, 104; do. 3 1/2s, 1980, 90 1/4; do. do. 1940, 95; do. 4s, 1958, 100 1/2; Houston Oil common, certificates, 8 to 8 1/4; do. preferred, certificates, 69 1/2 to 69 3/4; Baltimore Traction (North Baltimore division) 5s, 110; Norfolk & Portsmouth Traction 5s, 89; Seaboard & Roanoke 5s, 106 1/4; Washington & Vandemere 4 1/2s, 96; Augusta & Aiken common, 24 1/2 to 24 3/4; do. preferred, 79; Chicago Railways 5s, 100 1/2 to 101; Alabama Consolidated Coal & Iron preferred, 53; Maryland & Pennsylvania incomes, 64; Baltimore Electric preferred, 41; Maryland Electric 5s, 98 1/2 to 99; Pennsylvania Water & Power common, 54 1/2 to 55; do. 5s, 90 1/4; United States Steel common, 67; Macon Railway & Light 5s, 101 1/4; Georgia & Alabama Consolidated 5s, 107 1/2; Interborough-Metropolitan 4 1/2s, 80 1/4; Petersburg Branch Railroad, 5; Lynchburg Water 4s, 1938, 93 1/4 to 93; Charleston Consolidated Electric 5s, 96 1/2; Macon, Dublin & Savannah 5s, 101 to 101 1/2; Jamison Coal & Coke, George's Creek 5s, 93; Merchants & Miners' Transportation Co., voting trust, 70 1/2; Norfolk Railway & Light 5s, 99 1/2; Charleston City Railway 5s, 104 1/4; Consolidation Coal, 100; Georgia Southern & Florida first preferred, 94 1/2; Charleston & Western Carolina 5s, 106 1/2; Chicago City Railway 5s, 102 1/2; Baltimore, Sparrows Point & Chesapeake 4 1/2s, 96 1/2; Carolina Central 4s, 93.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended
January 3, 1912.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	133	...
Atlantic Coast of Conn.....	100	263 1/2	...

Fairmont & Clark, Trac. Pfd.....	100	82	85
Georgia Sou. & Fla. 1st Pfd.....	100	94 1/2	...
Maryland & Pennsylvania.....	100	...	32
Norfolk Railway & Light.....	25	26	...
Seaboard Co. Common.....	100	25 1/4	...
Seaboard Co. 2d Pfd.....	100	63 1/2	...
United Rys. & Elec. Co.....	50	18 1/4	18 3/4

Bank Stocks.			
Bank of Baltimore.....	100	...	171
Bank of Commerce.....	15	...	31
Citizens'.....	10	...	40
Farmers & Merchants'.....	40	...	53
First National.....	100	133 1/2	138
Marine.....	30	42 1/2	...
Mechanics'.....	10	29	30
Merchants'.....	100	...	185
National City.....	100	...	112
Western.....	20	37	...

Trust, Fidelity and Casualty Stocks.			
Colonial Trust.....	50	27 1/4	29
Continental Trust.....	100	...	227
Fidelity & Harrisburg.....	100	...	105
Maryland Trust.....	100	...	95
Maryland Trust Pfd.....	100	115	116
Maryland Casualty.....	25	91	92
Mercantile Trust & Deposit.....	50	148	150
Union Trust.....	50	...	68
U. S. Fidelity & Guaranty.....	100	180	187 1/2

Miscellaneous Stocks.			
Baltimore Brick.....	100	1	...
Baltimore Electric Pfd.....	100	...	42
Con. Gas, Elec. Lt. & P. Com.....	96	...	97
Con. Gas, Elec. Lt. & P. Pfd.....	100	...	102
Consolidation Coal.....	100	100	101
G. B. S. Brewing Co.....	100	...	3 1/4

Railroad Bonds.			
Atlantic Coast 1st 4s.....	95 1/4	95 1/4	...
Atlantic Coast Conv. Deben. 4s.....	101 1/2	101 1/2	...
At. Coast (Conn.) 4s, Cfs. 5-20s.....	90	92	...
Atlantic Coast (Conn.) 5s, Cfs.....	105	106 1/2	...
Atlantic Coast (S. C.) 4s.....	...	96 1/2	...
Atlantic Coast L. & N. C. T. 4s.....	...	95	...
Balto. & Harrisburg 5s.....	104	...	104
Balto. & Harrisburg Ext. 5s.....	104	...	104
Carolina Central 4s.....	93	...	93
Charleston & West. Car. 5s.....	106 1/2	107	...
Coal & Iron Railway 5s.....	101	...	101
Col. & Green. 1st 6s.....	106	107	...
Cumberland & Penna. 5s.....	103	...	103
Georgia & Alabama 5s.....	107 1/2	107 1/2	...
Georgia Car. & North. 1st 5s.....	105	...	105
Georgia Southern & Fla. 1st 5s.....	105	...	108
Macon, Dublin & Savannah 5s.....	101	101 1/2	...
Maryland & Pennsylvania 4s.....	87 1/2	...	87 1/2
New Orleans Gr. Nor. 1st 5s.....	73 1/2	74 1/2	...
Petersburg Class A 5s.....	107	...	107
Potomac Valley 1st 5s.....	108	109 1/2	...
Raleigh & Augusta 1st 6s.....	115	...	115
Raleigh & Gaston 5s.....	...	112	...
Seaboard Air Line 5s.....	89 1/2	89 1/2	...
Seaboard 4s, Stamped.....	82 1/2	83	...
Seaboard Adjustment 5s.....	82 1/2	...	82 1/2
Seaboard Refunding 4s.....	82 1/2	...	82 1/2
Seaboard & Roanoke 5s.....	106 1/4	106 1/4	...
Seaboard & Roanoke 6s.....	100	...	100
South Bound 5s.....	108	108 1/2	...
Virginia Midland 4th 5s.....	104	104 1/2	...
Virginia Midland 5th 5s.....	108	108 1/2	...
Virginia Midland 6th 5s.....	108	108 1/2	...
Washington Terminal 3 1/2s.....	86 1/2	87 1/2	...
Western Maryland 4s.....	87 1/2	87 1/2	...
Wilmington & Weldon 4s.....	96 1/4	...	96 1/4
Wilmington & Weldon 5s.....	109	110 1/2	...
Washington-Vandemere 4 1/2s.....	...	96	...

Street Railway Bonds.			
Anacostia & Potomac 5s.....	101	...	101
Augusta Railway & Electric 5s.....	100	103	...
Baltimore, Sp. Pt. & C. 4 1/2s.....	...	96 1/2	...
Baltimore Traction 1st 5s.....	107 1/2	108 1/2	...
Baltimore Traction 2d 5s.....	107 1/2	108 1/2	...
Charleston City Railway 5s.....	104 1/2	105	...
Charleston Co. Electric 5s.....	...	96 1/4	...
City & Suburban 5s (Balto.).....	105	106	...
Fairmont & Clarksburg Trac. 5s.....	100	100 1/4	...
Knoxville Traction 5s.....	105	...	105
Macon Railway & Light 5s.....	101	101 1/2	...
Maryland Electric Railways 5s.....	98 1/2	98 3/4	...
Memphis Street Railway 5s.....	98 1/2	98 3/4	...
Norfolk & Portsmouth Trac. 5s.....	98 1/2	98 3/4	...
Norfolk Railway & Light 5s.....	99 1/2	99 3/4	...
Norfolk Street Railway 5s.....	107 1/2	108 1/2	...
United Railways 1st 4s.....	85	85 1/4	...
United Railways Income 4s.....	62	62 1/4	...
United Railways Funding 5s.....	96	96 1/2	...
United Railways Notes 5s.....	99 1/2	99 3/4	...
Virginia Railway & Power 5s.....	96	96 1/2	...

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending January 1.

Abbeville Cotton Mills (S. C.).....	76	...	76
Aiken Mfg. Co. (S. C.).....	80	...	80
American Spinning Co. (S. C.).....	160	...	160
Anderson Cotton Mills (S. C.).....	48	...	48
Anderson Cot. Mills (S. C.) Pfd.....	100	...	100
Arcadia Mills (S. C.).....	92	...	92
Arkwright Cotton Mills (S. C.).....	99	100	...
Belt Mills (S. C.).....	105	106	...
Brandon Mills (S. C.).....	90	103	...
Brown Mills (S. C.).....	88	89	...
Chickamauga Mfg. Co. (S. C.).....	170	...	170
Canton Mfg. Co. (S. C.) Pfd.....	97	...	97
Clinton Cotton Mills (S. C.).....	120	...	120
Courtenay Mfg. Co. (S. C.).....	100	...	100
Dallas Mfg. Co. (Ala.).....	99	...	99
Darlington Mfg. Co. (S. C.).....	80	...	80
D. E. Converse Co. (S. C.).....	90	...	90
Drayton Mills (S. C.).....	117	...	117
Eagle & Pines Mills (S. C.).....	145	...	145
Easley Cotton Mills (S. C.).....	122	126	...
Enoree Mfg. Co. (S. C.).....	60	62	...
Enoree Mfg. Co. (S. C.) Pfd.....	96	100	...
Gaffney Mfg. Co. (S. C.).....	57	63	...
Gainesville Cotton Mills (Ga.).....	72	80	...
Glenwood Cotton Mills (S. C.).....	130	150	...
Gluck Mills (S. C.).....	99	...	99
Graniteville Mfg. Co. (S. C.).....	145	...	145
Greenwood Cotton Mills (S. C.).....	57	60	...
Grendel Mills (S. C.).....	90	100	...
Hartsville Cotton Mill (S. C.).....	160	...	160
Henrietta Mills (N. C.).....	176	...	176
Inman Mills (S. C.).....	106	...	106

King Mfg. Co. J. P. (Ga.).....	80	85
Lancaster Cotton Mills (S. C.).....	130	...
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	104	112
Laurens Mills (S. C.).....	120	125
Limestone Mills (S. C.).....	155	160
Lockhart Mills (S. C.) Pfd.....	90	100
Loray Cotton Mills (S. C.) Pfd.....	80	85
Marlboro Cotton Mills (S. C.).....	102	...
Mills Mfg. Co. (S. C.).....	95	...
Molokan Mfg. Co. (S. C.).....	100	...
Monaghan Mills (S. C.).....	105	110
Monarch Cotton Mills (S. C.).....	125	130
Ninety-Six Cotton Mills (S. C.).....	130	150
Norris Cotton Mills (S. C.).....	121	130
Olympia Cotton Mills (S. C.).....	80	...
Orr Cotton Mills (S. C.).....	90	92
Pacolet Mfg. Co. (S. C.).....	95	100
Pacolet Mfg. Co. (S. C.) Pfd.....	25	26
Parker Preferred.....	65	...
Pelzer Mfg. Co. (S. C.).....	163	...
Piedmont Mfg. Co. (S. C.).....	175	177
Poe Mfg. Co. P. W. (S. C.).....	110	115
Saxon Mills (S. C.).....	180	190
Spartan Mills (S. C.).....	120	130
Trion Mfg. Co. (Ga.).....	130	150
Tucapau Mills (S. C.).....	300	350
Union-Buffalo (S. C.) 1st Pfd.....	80	...
Union-Buffalo (S. C.) 2d Pfd.....	110	115
Victor Mfg. Co. (S. C.).....	90	95
Warren Mfg. Co. (S. C.).....	100	105
Warren Mfg. Co. (S. C.) Pfd.....	100	105
Washington Mills (Va.) Pfd.....	108	110
Whitney Mfg. Co. (S. C.).....	110	120
Wicaccaset Mills (N. C.).....	125	135
Woodruff Cotton Mills (S. C.).....	105	110
Woodside Cotton Mills (S. C.).....	100	105
Watts Mills (S. C.).....	70	85
Williamston Mills (S. C.).....	110	125

The Finance & Trust Co.

The Finance & Trust Co., organized last July with \$450,000 capital stock, is now occupying its new and commodious quarters in the United States Fidelity & Guaranty Building, Baltimore.

This company specializes in the financing of accounts of manufacturers by purchasing their accounts receivable as goods are shipped to buyers. This is done along the lines of the system in vogue among English and French banks, to the mutual advantage of manufacturer, buyer and banker. Its business extends to the territory contiguous to Baltimore, and particularly to States of the South. A large part of its business is with firms in Virginia, West Virginia, the Carolinas, Georgia, Tennessee and Alabama.

Among the directors of the Finance & Trust Co. are some of the leading progressive business men of Baltimore, including A. R. L. Dohme, president of Sharp & Dohme, manufacturing chemists; Elmore B. Jeffery, president American Baking Co., and John L. Alcock, lumber exporter. The officers are: President, E. L. Norton; first vice-president, K. F. Brown; second vice-president, Ernest Roberts; treasurer, F. R. V. Williams, and secretary, C. W. Hodell.

FINANCIAL CORPORATIONS.

Ala., Birmingham.—The American Mortgage & Loan Co., capital \$1,000,000, is reported to have begun business at 417-18-19-20 Empire Bldg. J. A. Gorman, president and treasurer; Alan Jamison, secretary; R. H. Wood, assistant secretary; A. D. Smith, first vice-president.

Ala., Birmingham.—The Universal Mortgage-Bond Co., capital \$200,000, is reported to have filed articles of incorporation. W. M. Blocker is president and D. M. Inman secretary-treasurer.

Ark., Mammoth Springs.—The Fulton County Bank of Mammoth Springs is reported to have filed articles of incorporation; capital \$10,000; B. F. Elder, president; J. J. Sampson, vice-president; C. C. Pressly, secretary and treasurer.

Ala., Orrville.—The Orrville Bank & Trust Co. is reported to have filed articles of incorporation; capital \$25,000. Incorporators: J. E. Dunaway of Orrville, Joe Lambert of Greensboro and T. F. Ormond of Orrville. J. E. Dunaway is president and T. F. Ormond, cashier.

Ark., Morrilton.—The Rainwater Bank & Trust Co. is reported chartered with \$50,000 capital. Wood Rainwater and others are the promoters.

Ark., Osceola.—The Mississippi County Building & Loan Association is reported to have filed articles of incorporation; capital \$1,000,000. B. F. Gay, president; Marshall Mott, vice-president; B. A. Lynch, secretary; A. M. Butt, treasurer.

Fla., Apopka.—A new bank capitalized at

\$15,000 is reported being organized with officers thus: President, Dr. C. P. McCall; vice-president, A. C. Starbird; cashier, W. G. Talton; directors, J. M. Sellers, William Edwards and Judge Warlow. Business is expected to begin about February 1. The foregoing is officially confirmed.

Ga., Atlanta.—A new financial institution, known as the A. M. Gabel Company, bankers, is reported organized with A. M. Gabel, president, and A. C. Werber, secretary and treasurer.

Ga., Atlanta.—The Cosmopolitan Life Insurance Co. is reported to have begun business; capital \$1,000,000. Officers: Clifford L. Anderson, president; E. M. Yow, vice-president; Paul B. Trammell, vice-president; John S. Hollinshead, secretary; Joseph Hirsch, treasurer; Ed M. Hafer, actuary; Dr. William Perrin Nicolson, medical director; Joel F. Armistead, general agent; directors, Clifford L. Anderson, E. M. Yow, John S. Hollinshead, Joseph Hirsch, Ed M. Hafer, Dr. William Perrin Nicolson, Joel F. Armistead, J. A. McCrary, all of Atlanta, and Paul B. Trammell, Dalton; J. S. Betts, Ashburn; A. B. C. Dorminey, Fitzgerald; E. P. Simpson, Toccoa; Campbell Courtney, Newry, S. C., and John N. Blacklar, Anderson, S. C.

Ga., Atlanta.—The Peachtree Investment Co., capital \$50,000, with privilege of increasing to \$250,000, is reported being organized by Frank C. Owens, Claude E. Buchanan and George P. Moore.

La., Lott.—Official: An official letter confirms report that a new bank is being organized with \$10,000 capital and that business is expected to begin about March 1. J. M. Wilson is interested.

La., De Quincey.—The De Quincey State Bank, capital \$15,000, is reported organized with directors thus: W. S. Ferguson, president; J. M. Gill, vice-president; J. H. Beall, cashier; L. Fouts and John E. Perkins. Business is expected to begin about January 1.

Md., Baltimore.—Official: The Forest Park

secretary and treasurer. Finance Committee: B. R. Graham, W. B. Brice and T. Q. Hall. Eleven thousand shares of stock at \$100 each have been subscribed.

Okla., Canadian.—Official: The Canadian Building & Loan Association incorporated; capital \$100,000. D. L. Roe, president; Fain G. Gillock, vice-president; W. P. Lewellen, second vice-president; John W. Roe, secretary and treasurer; W. H. Fuller, attorney. Business began January 1. Offices in First National Bank Bldg.

Okla., Grove.—The First National Bank of Grove is reported chartered; capital \$25,000. J. E. Kelley, president; Nat M. Perry, vice-president; T. H. Thompson, cashier; N. W. Johnson, assistant cashier.

Okla., Miami.—The Pioneer Abstract & Loan Co., capital \$5000, is reported incorporated by G. E. Bomford, Ray E. Blair and A. C. Wallace.

S. C., Columbia.—The Central Building and Loan Association is reported to have been granted a commission; capital \$150,000; petitioners, R. G. Rhett, T. T. Hyde and R. S. Whaley.

Tenn., Chattanooga.—The American Trust & Banking Co. has elected H. S. Probasco president, E. Y. Chapin and S. L. Probasco vice-presidents, and D. H. Griswold cashier.

Tenn., Tullahoma.—The Planters' Bank & Trust Co., capital \$20,000, is reported organized with A. P. Ray president and O. C. Richardson cashier.

Tenn., White's Creek.—The White's Creek Bank & Trust Co., capital \$10,000, is reported to have filed its charter; incorporators, J. B. White, N. P. LeSueur, R. J. Lyles, Jr., J. H. Zarecor and R. D. Marshall.

Tex., Austin.—The International Bankers' Life Insurance Co. is reported organized with J. Lynn Hunter as president.

Tex., El Paso.—The Commercial National Bank is reported approved; capital \$100,000; organizers, J. D. Campbell, El Paso; C. B. Hudspeth, C. S. Hill, J. E. Spencer and J. Y. Canon. Business is to begin about January 15 with offices in the Buckler Bldg.

Tex., San Antonio.—A new bank and trust company with \$1,000,000 capital and \$500,000 surplus is being organized by G. S. McElroy, Judge J. W. Webb, E. A. Holmgren, Judge E. D. Henry, Geo. E. Marshall and J. C. Tips, all of San Antonio. George S. McElroy will be president.

Tex., Springtown.—Official: The First State Bank of Springtown has made application for a charter; capital \$15,000; directors, J. F. Ward, president, Springtown; J. D. Daughy, vice-president, Weatherford; J. D. Hutcheson, cashier; G. A. Frazier, G. B. Moody of Springtown; J. B. Hawser, Boyd, R. F. D.; G. A. Holland, Weatherford. This bank will liquidate the First Bank of Springtown.

NEW SECURITIES.

Ala., Birmingham.—An official letter says that the city does not contemplate issuing bonds at any time soon. H. S. Ryall is secretary Board of City Commissioners.

Ala., Birmingham.—An ordinance is published for an issue of \$42,000 of 6 per cent. 10-year public improvement bonds of Birmingham; denomination \$500 each; dated January 1, 1912. H. S. Ryall is City Clerk.

Ala., Jasper.—March 1, it is reported, an election is to be held to vote on \$300,000 of Walker county road-improvement bonds.

Ala., Linden.—Official: Date for opening bids for the \$10,000 of 6 per cent. school-building bonds has not been set; denomination \$500; dated December 1, 1911; maturity 1921. A. B. Stone is Mayor and E. A. Borley Town Clerk. Press dispatches give January 5 as date for opening bids.

Ala., Marion.—Otto Marx & Co., Birmingham, are reported to have purchased \$110,000 of 5 per cent. 30-year Perry county road bonds at \$130.30 premium.

Ala., Mobile.—Official: The City Bank & Trust Co., Mobile, purchased on December 18 at 155.100 the \$500,000 of 5 per cent. Mobile county road bonds; denomination \$500; first \$150,000 issued February 1, 1912; maturity February 11, 1932. George E. Stope is county treasurer. Address Board of Revenue and Road Commissioners.

Ala., Wetumpka.—Reported that all bids received for the \$50,000 of Elmore county 5 per cent. road bonds were rejected.

Fla., Fernandina.—The First National Bank of Fernandina, according to press dispatches, has purchased \$60,000 of road and bridge bonds of Districts 1, 2 and 3 of Nassau county.

Fla., Jasper.—The Bankers' Trust Co. of Jacksonville is reported to have been

awarded the \$30,000 of 5 per cent. 30-year sewer, street and city hall bonds.

Fla., Lakeland.—Official: Voted: \$75,000 of sewer, \$60,000 of street and \$15,000 of public-building bonds. John F. Cox is Mayor, and H. D. Bassett, C. G. Memminger, G. B. Murrell bond trustees.

Fla., Pensacola.—Regarding the \$300,000 of 6 per cent. special improvement bonds to be issued, an official letter says: "The city does not arrange for the sale of these bonds, they are turned over to the contractor as part cash for the work, and he disposes of them as he sees fit." Frank Reilly is Mayor.

Ga., Bainbridge.—Official: Voted December 11: \$100,000 of 5 per cent. 1-30-year school-building, city hall and paving bonds; denomination \$1000; dated January, 1912. J. W. Callahan is Mayor.

Ga., Brunswick.—Reports state that an election will probably be held during 1912 to vote on \$150,000 of sewerage bonds.

Ga., Claxton.—Official: Bids will be received until noon January 16 for \$25,000 of 5 per cent. 10-30-year electric-light and water-works bonds; denomination \$1000. W. E. Freeman is Mayor.

Ga., Douglas.—Judge W. C. Lankford may be addressed regarding the public-improvement bonds recently voted. J. D. Knowles is City Clerk.

Ga., Glennville.—Reported voted: \$15,000 of school bonds.

Ga., Manchester.—Official: Bids will be received until noon February 15 for \$15,000 of 5 per cent. electric-light bonds; dated January 1, 1912; maturity January, 1932 to 1941. Jas. S. Peters is City Clerk and Treasurer.

Ga., Thomasville.—January 16, it is reported, an election is to be held to vote on \$50,000 of 4½ per cent. school bonds. J. M. Dekle is Mayor and A. A. Riley Clerk.

Ga., Washington.—Official: F. H. Ficklen, Washington, Ga., purchased on December 20 at par, accrued interest and \$730 premium \$30,000 of 5 per cent. power-plant construction bonds; denomination \$1000; dated January 1, 1912; maturity July, 1941. E. A. Barnett is Mayor.

Ga., Washington.—F. H. Ficklen of Washington, Ga., is reported to have purchased \$20,000 of electric-light bonds at \$730 premium.

Ky., Highlands.—Well, Roth & Co., Cincinnati, are reported to have purchased \$25,000 of 5 per cent. 15-year building bonds of Graded Common School District No. 2 at \$107.50 premium.

Ky., Louisville.—The question of issuing about \$200,000 of sewer bonds is reported under consideration. Dispatches also state that it is proposed to issue \$1,000,000 of school bonds.

Ky., Pineville.—Official: \$30,000 of school bonds have been sold. N. R. Patterson is Mayor and F. A. Heath is Clerk.

La., Columbia.—E. H. Turner, secretary School Board, it is reported, received bids until 11 A. M. January 2 for \$12,500 of 5 per cent. high-school bonds of District No. 14, Caldwell parish.

La., Lake Charles.—Bids will be received until 7.30 P. M. February 6 for \$100,000 of 5 per cent. street-paving bonds; denomination \$1000. C. B. Richard is Mayor.

La., Patterson.—Reported voted: \$40,000 of bonds in aid of the Iberia-St. Mary & Eastern Railroad.

Md., Annapolis.—Bids will be received until noon February 1 for \$1,000,000 of 3½ per cent. series "E" State roads loan; denomination \$1000. Address Murray Vandiver, Treasurer.

Md., Annapolis.—The Board of Public Works is reported to have awarded bonds of the public highway loan for 1911 to Baltimore bidders as follows: To Nelson Cook & Co. and Baker, Watts & Co., \$25,000 at \$100.74; Townsend Scott & Co., \$25,000 at \$100.58; Riggs & McLane, \$3000 at \$106.63; Safe Deposit & Trust Co., \$74,000 at \$100.51; H. Orlick, \$10,000 at \$109.55; Baker, Watts & Co., \$1000 at \$101.12½; John A. Yakel, \$10,000 at \$100.68; W. D. Jones, \$2000 at \$101.05.

Miss., Brookhaven.—The Interstate Trust & Banking Co. of New Orleans is reported to have purchased \$10,000 of school-improvement bonds.

Miss., Vicksburg.—January 23, it is reported, an election is to be held to vote on \$100,000 of street-paving bonds.

Mo., Clarence.—Official: The Nalley drainage district of Shelby county is about to offer bonds for sale. Address Henry Funk, Commissioner.

Mo., Doniphan.—Press dispatches state that petitions are being circulated calling for an election to vote on electric-light and sewer bonds.

Mo., Fulton.—Reported voted: \$100,000 of road bonds.

Mo., Jefferson City.—Reported voted: \$70,000 of public-improvement bonds.

Mo., Jefferson City.—Press dispatches state that \$158,500 of State Capitol bonds have been awarded at par as follows: Bank of Sweet Springs, \$50,000; First National Bank, Jefferson City, \$25,000; Bank of Lowry, Lowry, Mo., \$10,000; Bank of Ava, Douglas county, \$1000; Farmers and Merchants' Bank of Holden, \$1000; Johnson & Lucas Banking Co., Osceola, \$15,000; Citizens' Bank of Union, \$1000; Carthage National Bank, \$500; National Bank of Commerce, Kansas City, \$50,000; Chisholme Bank, \$2500; Westport Ave. Bank, Kansas City, \$5000; Fannie C. Brady, Kansas City, \$1000; H. P. Koehler, Kansas City, \$1000; Laura G. Hyde of Wichita, Kans., \$500; total, \$158,000.

Mo., Jefferson City.—Reports state that bids will probably be asked about January 15 for the \$3,500,000 of 3½ per cent. State Capitol bonds. John P. Gordon is State Auditor.

N. C., Apex.—Official: Bids will be received until 7 P. M. January 20 for \$10,000 of 6 per cent. 20-year municipal building, street and sidewalk improvement bonds; dated January 1, 1912; denomination \$500. A. C. Hughes is Mayor.

N. C., Beaufort.—Official: Bids will be received until 5 P. M. January 11 for \$10,000 of 5 per cent. town hall bonds. A. T. Gardner is Mayor and Thos. Thomas town clerk.

N. C., Charlotte.—Steps are reported being taken to sell street-paving bonds. E. W. Thompson is chairman finance committee, Board of Aldermen.

N. C., Elkin.—Reports state that \$20,000 of 5 per cent. Elkin township, Surry county, bonds are being offered for sale.

N. C., Enfield.—Official: F. M. Stafford & Co., Chattanooga, Tenn., purchased on December 6 at \$210 premium the \$10,000 of 6 per cent. 20-year electric-light plant bonds; denomination \$500; dated January 1, 1912. W. T. Clement is Mayor.

N. C., Fayetteville.—Official: The election to vote on Cumberland county road bonds is postponed until some time during the spring of 1912. Address P. R. Hall.

N. C., Waynesville.—Reported that John Nuveen & Co., Chicago, have purchased \$32,000 of 5 per cent. 30-year refunding and water bonds.

N. C., Wilmington.—The Atlantic Trust & Banking Co. is reported to have purchased \$30,000 of street and \$100,000 of sewerage bonds.

N. C., Winston-Salem.—Reported voted: \$50,000 of school, \$15,000 of street and \$10,000 of sewer bonds.

Okla., Ardmore.—The John Newneen Land Co. is reported to have purchased at \$218½ premium \$100,000 of school bonds.

Okla., Ardmore.—Carter county is reported to have sold \$30,000 of 5 per cent. 25-year warrant-funding bonds.

Okla., Hammon.—Official: Bids will be opened January 11 for \$17,500 of water-works and \$3500 of electric-light bonds voted December 20. Address A. T. Patterson, secretary-treasurer Western Engineering Co.

Okla., Hobart.—W. M. Brooks, Oklahoma City, is reported to have purchased \$17,500 of 6 per cent. drainage bonds.

Okla., Lawton.—Official: Bids will be received until 2 P. M. January 8 for \$70,000 of 5 per cent. 25-year funding bonds. Address Fred J. Bedford, Commissioner of Finance.

Okla., Lawton.—E. H. Rollins & Sons of Chicago are reported to have been awarded, at 101.68 and interest, \$20,134.74 of 5 per cent. 20-year Comanche county funding bonds; denomination \$1000; dated December 9, 1911.

Okla., Lawton.—Bids will be received until 2 P. M. January 8 for \$70,000 of 5 per cent. 25-year funding bonds; denomination \$1000; dated August 14, 1911. Address Fred J. Bedford, Commissioner of Finance.

Okla., Nowata.—John Nuveen & Co., Chicago, are reported to have purchased \$20,000 of 5½ per cent. 30-year City Hall bonds at \$255 premium.

Okla., Tulsa.—Official: The Exchange National Bank of Tulsa, Okla., is reported to have purchased at par and accrued interest \$100,000 of sewer, \$80,000 of water, \$50,000 of fire, \$33,000 of street-improvement and \$11,000 of paving 5 per cent. 5-20-year bonds; denomination \$1000; dated August 15, 1911.

Tenn., Chattanooga.—Official: Bids will be received until 10 A. M. January 8 for \$4202.48 of 6 per cent. 14-year paving bonds of district 153; dated December 9, 1911. T. C. Thompson is Mayor.

Tenn., Knoxville.—Notice is given that bids will be received until noon January 5 for \$15,000 of 6 per cent. 1-3-year city improvement bonds; denomination \$1000. S. R. Rambo is chairman finance committee.

Tenn., Nashville.—Notice is given that bids will be received until noon January 10 for \$150,000 of 4 per cent. Davidson county Tennessee State Fair bonds; maturity January 1, 1941; optional after January 1, 1926; denomination \$500. Address V. I. Witherspoon, vice-president Union Trust Co.

Tex., Alvin.—J. C. Kelso of Galveston is reported to have been awarded at par and interest \$10,000 of street-improvement bonds.

Tex., Austin.—According to press dispatches an election is to be held in January to vote on \$500,000 of library, sewer and street bonds.

Tex., Austin.—The Attorney-General has approved securities as follows: \$25,000 of 5 per cent. 40-year bonds of Caldwell county road district No. 4; \$20,000 of 5 per cent. 10-50 year Paris water-works extension bonds; \$25,000 of 5 per cent. 20-40-year Sweetwater street-improvement bonds; \$8000 of 5 per cent. 10-40-year Franklin independent school district bonds.

Tex., Bay City.—An election is to be held in Matagorda county in January, it is reported, to vote on \$234,990.13 of bonds of drainage district No. 2.

Tex., Brady.—Official: S. W. Hughes, Brady, Tex., has purchased at par and accrued interest, less \$1118 for commissions, \$40,000 of 5 per cent. 10-40-year water-works improvement bonds; denomination \$1000; dated April 10, 1911. Address S. M. Richardson, Brady, Tex.

Tex., Coleman.—Official: The \$25,000 of 5 per cent. 40-year street-improvement bonds voted August 12, 1911, will be disposed of at private sale; denomination \$500; dated September 1, 1911. Address R. H. Alexander.

Tex., Dallas.—Dispatches state that it is proposed to hold an election in April to vote on \$2,000,000 of street, water, city hall and other improvement bonds.

Tex., Fort Worth.—Official: Voted December 12: \$1,500,000 of 5 per cent. 10-40-year Tarrant county road and bridge bonds. C. J. McKenna is County Auditor.

Tex., Franklin.—January 20, it is reported, an election is to be held to vote on \$25,000 of Robertson county bridge bonds.

Tex., Franklin.—The election to vote on \$25,000 of Robertson county bridge bonds will, it is stated, be held January 20.

Tex., Gal.—January 6, it is reported, an election is to be held in Borden county to vote on \$50,000 of courthouse bonds.

Tex., Groesbeck.—Official: Voted December 16: \$150,000 of Limestone county, Precinct No. 4, road-improvement bonds. Address Julius Nussbaum, Mexico, Tex.

Tex., Kountze.—District No. 2, Hardin county, is reported to have voted \$50,000 of road bonds.

Tex., Orange.—Official: Voted December 20: \$200,000 of 5 per cent. 40-year road bonds; denomination \$1000. Address O. R. Sholars, County Judge.

Tex., South Fort Worth.—Reported that South Fort Worth, formerly Prairie Chapel, has voted \$25,000 of school-building bonds.

Tex., Terrell.—An official letter says that no bonds will be issued by the city until next year, say in the early spring. H. Galbraith is chairman of the commission.

Tex., Victoria.—Reported voted: \$300,000 of road-improvement bonds of Victoria county.

Tex., Wharton.—Official: January 19 an election is to be held in Wharton county to vote on \$300,000 of road bonds.

Va., Boydton.—Chairman Board of Supervisors of Mecklenburg county will, it is reported, receive bids until January 29 for \$240,000 of 5 per cent. road-improvement bonds.

Va., Lynchburg.—Official: Bids will be opened January 25 for \$550,000 of 4½ per cent. public improvement bonds; denomination \$1000; dated January 1, 1912; maturity January 1, 1946. Address John M. Otey, Auditor.

Va., Pulaski.—Well, Roth & Co. of Cincinnati are reported to have been awarded at par \$70,000 of 5½ per cent. 10-30-year Pulaski county road-improvement bonds.

W. Va., Harrisville.—Press dispatches state that a special election is to be held in Clay district, Ritchie county, to vote on \$30,000 of school bonds.

At Manchester, Ga., bids will be received until noon February 15 for \$15,000 of 5 per cent. 20-25-year electric-light bonds. Further particulars will be found in the advertising columns.

At Claxton, Ga., bids will be received until noon January 16 for \$25,000 of 5 per cent.

[For Additional Financial News, See Page 94.]

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 South and Water Sts., BALTIMORE, MD.
 DOUGLAS H. THOMAS, President.
 WM. INGLE, Vice-Pres. and Cashier.
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 REALTY DEPARTMENT has sites for manufacturing industries. Modern Methods of management of property.
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 J. ERNEST SMITH, V.-Pres. and Gen. Counsel.
 WM. G. TAYLOR, Treasurer.
 HARRY W. DAVIS, Secretary.
 W. W. PUSEY, 2d Title and Real Estate Officer.

H. B. Wilcox, President, Blanchard Randall, V.-Pres.
 Wm. S. Hammond, Cashier.
 Saml. W. Tychudi A. Cash. R. E. Bolling, A. Cash.

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 Capital - - - - \$1,000,000
 Surplus and Net Profits - - - 400,000
 Deposits - - - - 6,500,000
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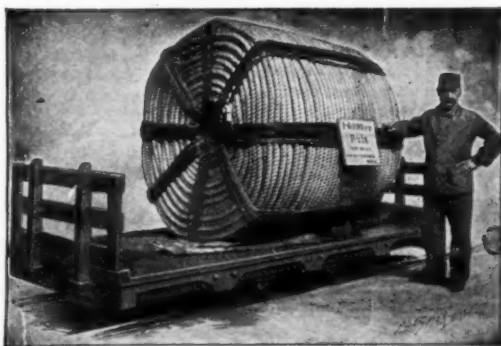
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water-works and electric light bonds. Further particulars will be found in the advertising columns.

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Double Your Capacity

How to increase the output of his mill without a large expenditure of money is a problem which often perplexes the average mill man. He realizes that under existing conditions he should have an added output to enable him to successfully meet competition. He, however, feels that he cannot at this time invest in new machines, much as he needs them.

It is to such a man that the Shimer Double Ceiling and Double Flooring Heads should appeal very forcibly. By their use the capacity of a matcher or molder may be doubled. The stock is run with double tongue and groove and then resawed into two marketable strips. The bits on the Shimer Double Heads mark the saw cut

line of division on the stock, so that the sawyer can at once detect any variation of the saw and correct it as the board is passing through.

These Heads are no experiment, but have been on the market long enough to be in use in a large number of the best mills in this and other countries. They will be found to be very complete and practical tools, carrying the Shimer guarantee to do as represented or no sale.

As an investment of \$33.08 and upward will give you about 100 per cent. gain in output, why not send today for full particulars in reference to these tools. Address Samuel J. Shimer & Sons, Milton, Pa. (adv.)

THIN STEEL KNIVES

To use thin steel knives or not—is a proposition that comes to the mind of every progressive lumberman at this time. The facilities offered by their use are no longer an experiment, and those who are willing to retreat from the march of progression will show their adherence to old foggy ideas, with all the defective methods accompanying.

To tear loose sometimes requires real courage, but usually such show their progressive spirit and compensate by the early advantages to their complete satisfaction.

Naturally, the reader may hesitate, owing to the varied methods of using the thin knife.

Some advocate the use of a square head with thin knife and spring steel back, whereas others purchase complete heads, of which there are a variety to select from, especially suited to the use of the thin steel knife.

It matters little which of the methods now in vogue may be adopted, because they all show especially advanced ideas for the planing and surfacing of lumber. There is one point, however, of particular interest, and that is relative to the kind of thin steel knives one adopts.

Many makes of these knives may be found with varying degrees of merit, but those which are especially useful and making particular claim to superiority are the Bedee Knives manufactured by Samuel J. Shimer & Sons, Milton, Pa., to whose product this journal has frequently referred in the past 20 years. (adv.)

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Price per 1000 in lots of	5000	10000	25000
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Letterheads unruled, 8 1/2 x 8 1/2	.92	.79	.71
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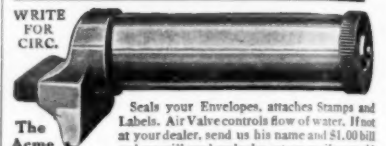
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Long Distance Phone
References—Any Bank in Savannah

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JOHN KÜCHLER, C. P. A., Vice-President

ELMER L. HATTER, C. P. A., Treasurer
ERNEST E. WOODEN, C. P. A., Secretary

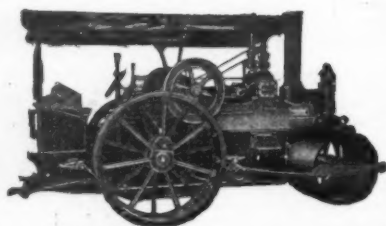
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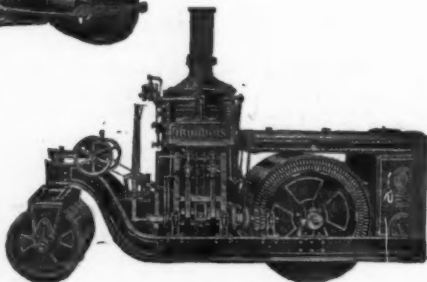


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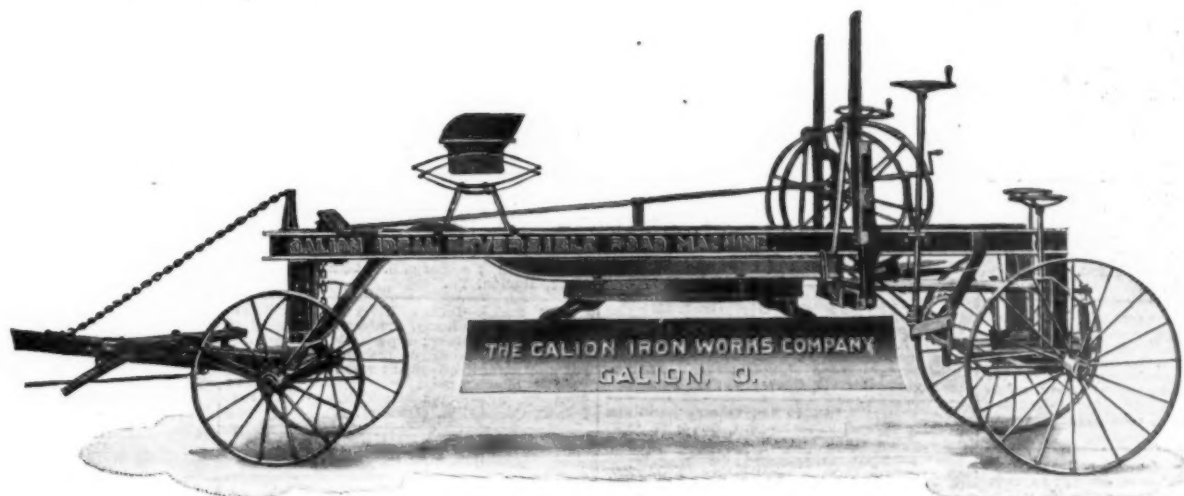
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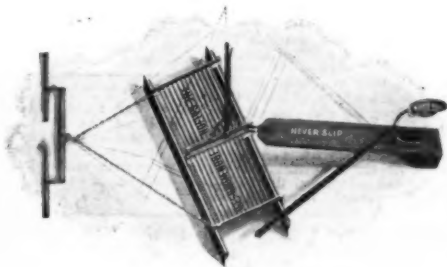
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The FIRST and ONLY simple, practical cotton picking machine that CAN replace the old process of hand-picking, each operator harvesting at least 500 cotton seed pounds a day of 10 hours.

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RALEIGH, N. C.

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Stationery handsomely Printed in black ink at unheard-of prices FOR CASH. Samples sent

Price per 1000 in lots of	5000	10000	25000
Six line Billheads	.85	.72	.64
Fourteen line Billheads	.99	.86	.78
Statements 5 1/2 x 8 1/2 inches	.92	.79	.71
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CRUSSELLE AUDIT CO.

(INCORPORATED)

ACCOUNTANTS AUDITORS
SYSTEMATIZERS
1006 Candler Bldg. ATLANTA, GEORGIA
All audits conducted by or under direct supervision of members of the Company.

CHARLES NEVILLE

Accountant and Auditor
BUSINESS SYSTEMS
501-502 Savannah Bank and Trust Co. Bldg.
SAVANNAH, GA.
Long Distance Phone
References—Any Bank in Savannah

CHARLES L. HEHL, C. P. A., President
JOHN KÜCHLER, C. P. A., Vice-President

ELMER L. HATTER, C. P. A., Treasurer
ERNEST E. WOODEN, C. P. A., Secretary

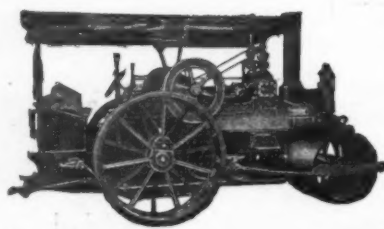
BALTIMORE AUDIT COMPANY

1027-1033 Calvert Building

BALTIMORE, MD.

BRANCH—Monticello Arcade Building, Norfolk, Va.

IROQUOIS

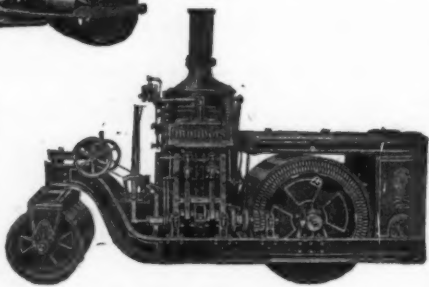


Macadam Rollers

Made in 10, 12, 15 ton sizes. Mass. Standard boilers and adjustable scrapers are only two of many features of Iroquois superiority.

Tandem Rollers

Two and a half, 5, 8 ton sizes. Mass. Standard boilers, steel gears step toothed, frames of heavy channel in one piece, are features found in no other roller.



Trouble-Proof, Long-Service

Paving and Road-Making Tools and Machinery

We manufacture a complete line of heating kettles (50 to 400 gals. capacity), surface heaters, mixers, fire wagons, pouring and melting pots, old material pans, hoes, cutters, rakes, dippers, tampers, sandals, etc.

SEND FOR CATALOGUE D AND PRICES

IROQUOIS IRON WORKS

BUFFALO, N. Y.

OFFICES IN ALL PRINCIPAL CITIES

Canadian Representative: Canada Foundry Co., Toronto, Ont.



4%

Our savings department gives 4% interest, compounded quarterly, and our certificates of deposit yield 4% quarterly, and your principal is absolutely safe. Since starting, 1869, we have grown rapidly. Conservative and able management has always characterized our institution. Printed matter gladly mailed on request.

The Savannah Bank & Trust Company

SAVANNAH, GEORGIA

Capital and Surplus - - \$1,200,000

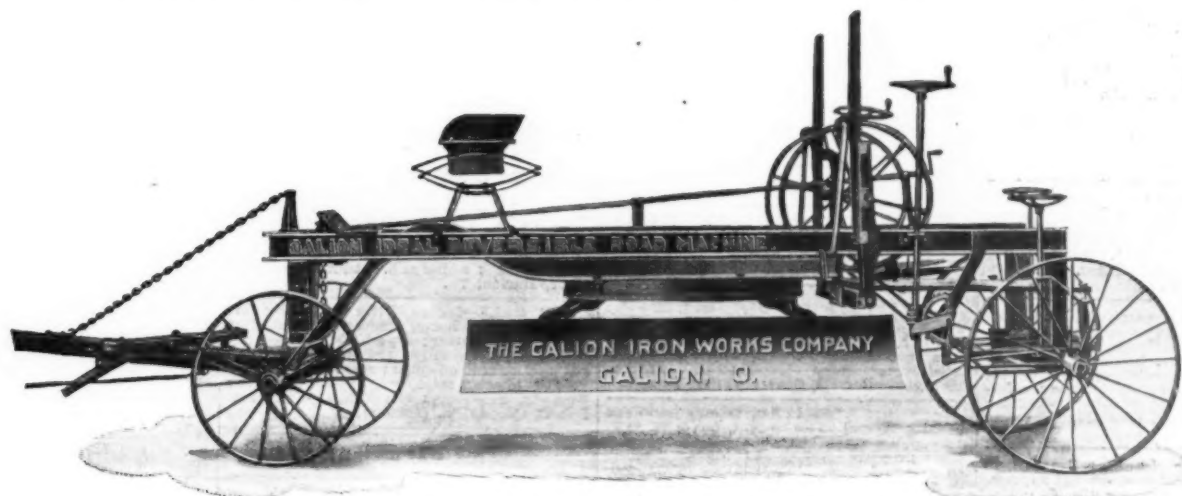
OFFICERS

WM. F. McCauley, Pres. Cashier—M. D. PAPY.
CHAS. G. BELL, Vice-Pres. Asst. Cash.—E. M. NICHOLS

Savannah is the primary naval stores market of the world, and makes the price on naval stores for the entire world. Annual receipts of this product are approximately valued over \$12,000,000.

Galion Culvert Pipe and Road Machinery

The "Galion Line" Is Tested—Tried—Proven to Be Most Modern
Correct in Design—Quality of Material and Workmanship



The Galion Ideal Steel Reversible Road Machine

The many distinctive special features on the Ideal place it far in advance. We manufacture five special new improved styles of road machines:

New Imperial road machine for 2 to 4 mules,
Little Ideal road machine for 2 to 4 mules,
Universal road machine for 4 to 6 mules,
Ideal road machine (regular) for 4 to 8 mules,
Ideal engine grader for 16 to 25 H. P. engine.

The Ideal engine grader is the only machine strong enough to be used successfully with a traction engine.

Let us send you our new free Road Machinery catalog and quote you prices.

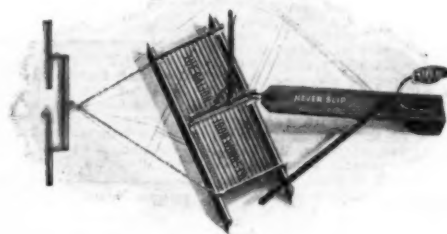
We ask for your business on the MERITS of our products.

We believe in the "SQAURE DEAL". Our prices are RIGHT. WE HAVE THE BEST LINE OF CULVERT PIPE AND ROAD MACHINERY IN THE WORLD.

We can prove it. All we ask is the chance. You be the judge after our proofs are in.

Write us for testimonials from the largest culvert pipe users in the South. Write us for the result of the competitive chemical and corrosion test made on our Sterling Metal Sheets by the Chemist of the State Highway Department of the State of Georgia. Write for the result of the competitive chemical and corrosion test on our Sterling Metal sheets by the Brown Laboratories of Nashville.

We have many other bona fide and convincing proofs in which you as a progressive Highway Official will surely be interested. Write for the catalogs—the prices—either to our home office or nearest branch office.



PATENT APPLIED FOR

Ideal Road Drag Complete With "Anti-Skid" Attachment

The Most Efficient and Complete Road Drag Outfit Ever Designed. This drag follows the line of draft and positively will not skid sidewise. This is only one of our Ten Styles comprising the Most Complete Line of Road Drags ever produced, ranging in price from \$8.50 up.

THE GALION IRON WORKS CO., Galion, Ohio

SOUTHERN OFFICES AND REPRESENTATIVES:

MANNING & PEPPER,
1715 Third National Bank Building,
Atlanta, Ga.

W. L. MERCER,
Kallaher Building, McCall Street,
Memphis, Tenn.

Classified Opportunities

MEN WANTED

WANTED—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

MANAGER FOR SMALL OIL MILL WANTED—Mill located in South America. Want a man capable of keeping up the machinery, extracting oil, making soap, toilet soap, leather dressings, etc. For full information address No. 922, care Manufacturers Record.

INTERESTED IN FLORIDA? Wanted—A man of good standing to handle a profitable proposition; big returns; experience not necessary; you can devote all or part of your time. Give reference. The Sebring Real Estate Co., Sebring, Ohio.

WANTED—Traveling salesmen to carry an up-to-date line of trunks and bags on commission; no advance. Appomattox Trunk & Bag Co., Inc., Petersburg, Va.

WE WANT to employ someone to grade and build roads in our township that has the tools and stock to do the work. We have about fifty miles of road to build. We want to commence work March 1. A. E. Smith, Chairman Highway Commission, Mt. Airy Township, Mt. Airy, N. C.

PROPRIETOR of a successful high-class retail business in fastest growing city in the South wants an energetic young man with a few thousand dollars to invest to take management of business, wishing to give his own time to manufacturing interest; references required; highest banking references given. Address No. 930, care Manufacturers Record.

WANTED—An experienced railroad man capable of filling position of general superintendent of 200 miles of new railroad, taking active charge of operation, also having the necessary executive ability to fill the position of general manager, which would be open later provided the proof of his capacity and ability to fill such position was given; splendid opportunity for right man. Address quickly, giving experience and references, P. O. Box No. 625, Mobile, Ala.

WANTED—A first-class general track man with experience in maintaining dirt track and surfacing new track; one capable of taking active charge and supervision of 150 miles of new track, to have charge of necessary force to maintain and surface and get track in first-class shape. This is not an office position, but an active position, and requires a man of experience and ability, who can obtain permanent employment by addressing P. O. Box No. 675, Mobile, Ala.

AGENCIES WANTED

AGENCIES WANTED FOR EXPORT—Manufacturers' agents in New York doing business with leading exporters desire one or two good agencies from manufacturers who wish to increase their foreign business. Address No. 914, care Manufacturers Record.

SITUATIONS WANTED

OFFICE OR CREDIT MANAGER in Southern or Southwestern city, by experienced, high-grade man; fully qualified and reliable; best references for ability to render satisfactory service. Address No. 918, care Manufacturers Record.

SITUATION WANTED with established manufacturing company with view of taking interest in company to amount of \$5000 or \$10,000; have had 10 years' experience in manufacturing and jobbing business and am willing to start at moderate salary. Address No. 923, care Manufacturers Record.

TRAFFIC AND SALES MANAGER of proven ability, capable of organizing and training a sales force; writing result-producing letters; preparing advertising and introducing office system; thorough knowledge of freight classification, billing and shipping; an office executive with a very broad business, railroad and financial experience; an exceptional opportunity for a large concern desiring an enterprising and energetic business getter and builder. Address "Permanent," 700 Tribune Bldg., N. Y. City.

WANTED—Office, financial or managerial permanent connection with a good live concern, where the most stringent system of things necessary to succeed in producing results in sales or production, including office, daily balances, audits and comparisons is needed; have a thorough knowledge of usages in business, banking, insurance, railroading and commercial law and the latest office systems. I can save my salary in economics. Address No. 931, care Manufacturers Record.

MIDDLE-AGED C. E., Member Am. Soc. C. E., university education, large experience in organization and management of public works, wide general knowledge of manufacturing and transportation, competent to supervise all kinds of civic improvements and encourage the location of industries, good habits, appearance and address and a "good mixer," desires to locate permanently in some progressive, ambitious Southern city, and would like employment with board of trade or similar body organized to promote the interests of the community. Would correspond with persons looking for such a man. Address P. O. Box 1298, Atlanta, Ga.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

BANKS

THE PALMETTO NATIONAL BANK, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

BUSINESS OPPORTUNITIES

BUSINESS WANTED—Am looking for a good business for my son. Any business offered must stand investigation. Address M. Record, Box 976, Cherry Valley, Illinois.

FACTORIES LOCATED, factory buildings in the principal cities to rent, factories, sawmills, flour mills, warehouses, real and personal property sold or exchanged. Timber, grazing and farm lands sold or exchanged. Properties cared for, rents collected. Office space, desk rooms and Chicago addresses arranged for. High-class manufacturing stocks and bonds for sale and exchange. Offer what you wish to sell, inquire for what you wish to buy. Negotiations confidential. Business promptly executed. Correspondence invited. Kreis & Company, 167 W. Washington street, Chicago, Ill.

LUMBER YARD FOR SALE—Stock, lumber, paint, oils, roofing, shingles, live stock, wagons, machinery, real estate and buildings, \$13,500; quick sale, \$11,000; requires cash, \$7500; balance, terms to suit; located in a growing Central Florida town, 7000 inhabitants; best yard in the town; three railroads, good track facilities, close proximity to mills. Owner's reason for selling, bad health. Wire or write for full particulars, Marcus E. Sperry, 217 American National Bank Building, Tampa, Florida.

WE PROMOTE SUBDIVISION SALES—If you own property in or close to a thriving city, cut it up in town lots and let us sell them by our red tag plan. They sell like hot cakes. Tom Magruder, Mgr., Moberly, Mo.

TO A PRACTICAL HANDLE MAN, who is well recommended, we will sell on such easy terms that he can pay for it from the earnings of the plant, an up-to-date plant for making hickory tool handles, singletrees, neckyokes, broom handles; well equipped with an abundant supply of available timber. Address No. 899, care Manufacturers Record.

WE PROMOTE TOWN LOT SALES—Land owners adjoining thriving cities, cut your acreage up into town lots, employ us to conduct a red-tag sale. We'll take the lots to the mint and coin them into money for you. Owners, write for particulars. F. J. Raymond Realty Co., Evansville, Ind.

FOR SALE—Old-established mercantile business in Eastern North Carolina; gross receipts, \$40,000 per year; owner's age reason for selling. Write Leighton Realty Co., Anderson, N. C.

IN A SOUTHERN TOWN of over 4000 population, where there is now being developed a hydro-electric power of 20,000 H. P., is a favorable opportunity for a foundry enterprise or a manufacturing plant that can be secured or organized on an attractive basis. Twelve acres of land, with sidetracks, buildings 75x100, and an investment of nearly \$20,000 can be had to the right parties with money and talent to manage, either in partnership with present owners or a sale outright.

This plant is new and erected primarily as a foundry and stove manufactory, but was closed on account of lack of working capital and talent.

The town is on three lines of railways and amidst the greatest opportunities of Southern development.

The immediate erection of the great water-power plant makes this city a most favorable location for new industries of various kinds. Address No. 920, care Manufacturers Record.

MAILING LISTS

MAILING LISTS—We can furnish 50,000 names, addresses, with amounts of taxable property, of residents of lower South Carolina, all verified by proper county officials. P. O. Box 85, Hampton, S. C.

MAPS AND BLUE PRINTS

MAPS OF TEXAS COUNTIES—We make blueprint maps of nearly all Texas counties and several Louisiana parishes. Write for prices on these desired. Singleton Bryan & Co., Beaumont, Texas.

TYPEWRITERS

IF YOU are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 609 E. Baltimore street, Baltimore, Md.

WINTER HOME FOR SALE

FLORIDA WINTER HOME—Ready-furnished six-room cottage; five-acre lot; banks on St. Johns River at Bluffton; best fishing and hunting; a bargain. Address William Hurt, Marion, Va.

FOR SALE—Indian River frontage; attractive winter home, modern; furnished if desired; sun parlor; superb views; best citrus soil; 400 fine citrus trees; 65 feet of elevation; highest on coast; rock road; cement walks; phone; good deep well; 11 acres; Northern neighbors; city limits. Come see. Box 31, Cocoa, Fla. (Owner).

ICE MACHINES

WANTED—To correspond with parties desiring or contemplating installing absorption ice machines manufactured by Columbus Iron Works. Consolidated Ice & Power Co., Valdosta, Ga.

INDUSTRIES WANTED

CEMENT PLANT

Best material, best location in the South; river and rail transportation to ports and direct to Panama. Address No. 925, care Manufacturers Record.

MISCELLANEOUS

ARE you looking for a good factory site? We have a growing town with good railroad facilities and offer splendid inducements. Address W. D. Welsh, Mayor, Kentwood, La.

LAREDO, TEXAS, wants a tourist hotel, cement factory, up-to-date educational institution, down-the-river railroad. Laredo has best coal Texas, natural gas, equable climate, abundant water, labor. In citrus fruit district. Address Board Trade.

SUFFOLK—The best manufacturing and distributing point in Virginia; six railroads and water transportation; plenty of labor; cheap fuel; electric power; seventy manufacturing plants in successful operation; opportunity for furniture and woodworking plants and any wholesale jobbing or manufacturing business; center of tidewater; richest farming section to be found; healthy; excellent schools and churches; filtered water, gas and sewer. Write Board of Trade, Suffolk, Va.

VICTORIA, TEXAS, head of navigation of Guadalupe River; center of cotton, corn, truck and citrus fruit-growing district of South Texas; country rapidly developing; opportunities for many industries. If interested in the coastal section of Texas, write for booklet "D" to the Secretary of the Progressive League.

CLEVELAND, TENN., WANTS YOU—The best town in the Southeast, with a hydro-electric development of 32,000 initial horsepower for manufacturing purposes, final development 82,000 horsepower. Free manufacturing sites; exemption from city and county taxes; ample railroad facilities; spring water pumped to all parts of the city; cheap raw materials; 186 miles of pike roads in county; fine farming and trucking section; best of public utilities; cheap white labor; cheap power; ideal location for cotton mill, furniture factory and brick-manufacturing plant; good climate; most rapidly developing city in the Southeast. Write Commercial Club, Cleveland, Tennessee.

WANTED—Asheville, N. C., 31,000 population, including suburbs; 35 miles paved streets; best water on earth; men with capital to invest in money-making enterprises; good opening for manufacturing enterprises. Write Board of Trade.

INDUSTRIAL PLANTS FOR SALE

COTTON MILL

FOR SALE—Cotton mill in upper South Carolina with about 5000 ring spindles and accompanying equipment for the production of cotton yarn. For full particulars address No. 921, care Manufacturers Record.

FACTORY

FACTORY FOR SALE OR RENT—50x130 feet, two stories, with additions; located on two good railroads in fine town having natural gas and water system. Address F. D. Freeborn, Knoxville, Pennsylvania.

LUMBER YARD

I HAVE a lumber yard in a town in prosperous farming district in Oklahoma; will sell for actual inventory; good chance for man to get into business in fast-growing Southwest; only \$1500 required to close transaction; balance, terms. Address No. 928, care Manufacturers Record.

FACTORY BUILDING

FOR LEASE OR SALE ON EASY TERMS. Two-story brick factory building, 200x30 feet, with ell, giving total floor space 30,000 square feet, with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers. Site 35x250 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroads and steamboat lines. Barton Myers, Norfolk, Va.

HANDLE AND SINGLETREE PLANT

FOR SALE—Handle and singletree plant, well equipped, where there is an abundance of available timber to last for many years. Address No. 900, care Manufacturers Record.

COMFORT AND MATTRESS FACTORY

MODERN BRICK BUILDING, sprinkled, steam heated, fifty by two hundred fifty feet, two-story; all machinery, ready for operation; warehouse, ten acres land, nine cottages; plenty labor; good health; good schools. Bargain for right party. Address No. 926, care Manufacturers Record.

ELECTRIC LIGHT PLANT

FOR SALE AT A BARGAIN—Complete equipment of an electric-light plant, consisting of one 14x36 mill type Murray Corliss engine, 2 85 H. P. Atlas tubular boilers, 1 Gem City heater, 3 boiler-feed pumps, smokestacks and settings, 1 90 K. W. single-phase A. C. generator, skeleton switchboard and instruments. Will sell all or any part. For prices and description address City Light and Water Plant, Coleman, Texas.

CEMENT BLOCK PLANT

THE BEST CEMENT-BLOCK PLANT IN GEORGIA, in the best town in Georgia, will be sold at once. Address Fitzgerald Granite Co., Fitzgerald, Ga.

MINERAL AND TIMBER LANDS WATER POWERS AND MISCELLANEOUS PROPERTIES

WRITE for list New Orleans residence lots and factory sites; Louisiana mineral, timber, cut-over and farm lands. Orient Co., Ltd., 513 Audubon Bldg., New Orleans, Louisiana.

MANUFACTURING SITES FREE, on railroad, about 60 miles east of Chicago; electric power free the first year. For Sale—Fruit lands near Houston, Texas. P. A. Ogden, Houston, Texas.

FOR SALE—Boundary of 256,000 acres in State of Durango, Mexico; good ranch, mineral and timber land; contains 500,000,000 feet yellow pine; railway building within 25 miles of lands; 25-mile tramway to new railway can be built at small cost; 100 miles to Pacific port of entry by rail, for ship-loading for use of Panama Canal route and for all American and European shipping markets. We control and can deliver promptly this valuable boundary for \$2.50 per acre; one-fourth down; one, two and three years for balance. Principals only need reply. Address for particulars, J. C. Lindley, Greensboro, N. C.

FACTORY SITES, Business Property, Residences and Farms. If interested in the metropolis of the Southwest or its territory, write for free land list and booklet on Houston, Texas (where 17 railroads meet the sea), or make your wants known. Bank references if desired. Central Land Co., 303 Theater Bldg., Houston, Texas.

IRRIGATED LANDS—Fine game preserve and club proposition, eight miles from Brunswick, on Altamaha River. This is a historical place, with Indian mounds, artesian wells and shell roads, containing 2350 acres, with 625 in cultivation. There was originally \$400,000 spent in cleaning up and arranging for irrigation. This must be sold at once to settle up an estate, so this can be had for \$200 cash; balance easy. Milwaukee Building and Investment Co., 1409 Candler Bldg., Atlanta, Ga.

FOR SALE—About 6500 acres of coal, several seams from four to eight feet, of which there is about 2757 acres in fee simple; 3600 acres of oil and gas; nearly 3000 acres of valuable timber; gas and oil have been struck almost on the boundary of this property. The Guyan Valley Railroad runs through this tract, and rights of way have been secured by another railroad also through this tract. Located in Logan county, West Virginia. William Gest, 537 Society for Savings Building, Cleveland, Ohio.

FOR SALE—Eighty acres suitable for high-grade residential subdivision purposes, fronting macadamized boulevard; city water; electric lights; within 350 yards trolley line; contemplated extension will pass the property; located outskirts thriving tidewater city; price low; terms reasonable. W. W. Robertson, Box 574, Norfolk, Va.

Classified Opportunities

COAL LANDS FOR SALE

FOR SALE—Special bargain in coal land. We offer for a limited time 303 acres of the Pittsburgh or river vein of coal located in Marshall county, West Virginia, three miles south of Cameron, on the B. & O. R. R. This is an excellent investment. The same coal practically adjoining this tract has sold as high as \$125 an acre. This tract we are able to offer at the bargain price of \$75 an acre; one-third down; balance in one and two years at 6 per cent. This coal will undoubtedly sell at \$100 an acre within two years, most likely at much more. It is worth more than we are asking, but we seek a quick sale. If you are interested in coal lands, oil and gas lands, royalties, leases, or production or timber lands, orchard lands or orchards, write us. There are many opportunities to make money in West Virginia. We know where the opportunities are. West Virginia Tri-Products Co., Howard L. Swisher, President, Morgantown, W. Va.

VALUABLE COAL TRACT FOR SALE.—A 4500-acre tract of coal land, located in East Tennessee, containing six workable surface veins of high-grade coal, suitable for steam, domestic and coking purposes, besides several excellent workable veins under the surface. The property is now within four miles of a railroad, and a charter for a new railroad has recently been taken out, the proposed route being through the center of this property. There is between 12,000,000 and 15,000,000 feet of merchantable hardwoods on the tract that can be cut and marketed at a handsome profit just as soon as this new road is completed. The price on the property is \$45 per acre, all cash, or \$50 per acre on terms. Blueprints and engineer's report will be furnished genuine buyers who can show financial ability to purchase such a property. Correspondence solicited with principals only; no agents. Address Albert P. Lee, 216 Sixth Ave., Nashville, Tenn.

TIMBER LAND FOR SALE

WE OFFER for quick sale 13,500 acres round timber, well located, adjacent to two railroads; new railroad will be built through the property; land in fee simple; estimated this will cut 2500 to 3000 per acre; can sell any quantity; minimum 3000 acres. Price \$10 per acre. Entire tract one body, \$9.50 per acre. Write or wire Marcus E. Sperry, 217 American National Bank Bldg., Tampa, Fla.

FOR SALE—2200 acres of timber land in Liberty county, Georgia, located one-half mile from Ludowica, known in the Clerk's office of the said county as the Charles Tutty estate. R. O. Tutty, executor.

About 1600 acres of this timber has not been timbered for 25 years; 1000 acres are now virgin turpentine. The Atlantic Coast Line runs through this tract of land. For terms and particulars apply to the Laborers & Mechanics' Realty Co., Inc., sole agents, 2006 11th St. N. W., Washington, D. C.

TIMBER FOR SALE

FOR SALE—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Iles, Alexandria, La.

TIMBER AND SAWMILL

FOR SALE—200,000,000 feet of pine, cypress, bay and gum, with well-equipped sawmill; equitable terms; transportation facilities good; best location in the South. Address George W. Deen, Waycross, Georgia.

CUT-OVER TIMBER LANDS

CUT-OVER TIMBER TRACTS.
50,000 acres cut-over pine lands, Miss. \$6.50
30,000 acres cut-over pine lands, La. 6.00
75,000 acres cut-over pine lands, Tex. 5.00
15,000 acres cut-over hardwoods, La. 4.50

Marsh Lands for Reclamation.
60,000 acres in a body, Gulf Coast of La. 3.00

Timber Lands.
20,000 acres L. L. Y. pine, Fla., cut \$500 ft. 7.00
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 21.00
30,000 acres hardwood, cut 10,000 ft. (60% red gum) 10.00
Finest red gum proposition South.

Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

10,730 ACRES Louisiana hardwood timber lands, 104,000,000 ft., on Sabine River, \$15 acre.
20,000 acres rich dark bottom cut-over hardwood, S. W. Arkansas, lands on Ry., \$6 acre.
35,000 acres Louisiana cut-over lands, \$5 acre.
Robert Sessions, Winthrop, Ark.

FARM AND TIMBER LANDS

FARM AND TIMBER LANDS.—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

WRITE THOMAS H. JONES for alfalfa and cotton lands; also timber lands. Greensboro, Hale county, Alabama.

ARKANSAS hardwood timber tracts; in touch with owners; have some bargains. Yell county colonization proposition, 15,000 acres, at \$5; timber enough to pay out. Fredricks Realty Company, Springdale, Ark.

I HAVE BARGAINS IN TIMBER TRACTS. Large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.
Wm. R. Taylor, Land and Timber Investments, 508 Perrin Building, New Orleans, La. Established 1898. Sales over \$6,000,000.

FLORIDA CYPRESS.—Five million feet, easily accessible; tract also carries pine, ash, poplar, hickory and gum; complete cruiser's report.

Pine Crest.—Very select site for colony; 1500 acres; close to town, transportation, high school; an improved highway; surveyed in lots and platted. Illustrated booklet with prices and terms. Frank H. Davis, Apopka, Fla.

FINE COLONIZATION TRACT. eastern part of North Carolina; over 9000 acres excellent black land, with enough pine and gum timber on it to pay for it; close to railroad. Price \$3.75 per acre. Terms can be arranged. McClure-Davenport-Taylor Company, Richmond, Virginia.

ALFALFA AND PECAN LAND.—2500 acres Red River bottom, 8 miles north Texarkana; good roads; five million feet hardwood timber; levee guaranteed; \$25 per acre. M. D. Tilson, Texarkana, Tex.

800 ACRES Cooke county land, on Red River; 400 acres in cultivation; 100 acres more suitable for cultivation; balance timber and pasture; nature of land red sticky and sandy; six sets of houses, wells, etc.; fenced and cross-fenced, part under hog fence; six miles of Marietta, Okla., the nearest railroad town; 1 1/2 miles of school; price \$30 per acre; one-half cash; balance, terms to suit. Write or come to see owner, Sam Gunter, Svelis Bend, Cooke county, Texas.

WE HAVE the following tracts to offer:
7500 acres of land, 5000 acres being virgin timber, averaging 3000 feet per acre; on railroad, near two of Florida's best towns; land adapted to citrus, vegetable and truck growing; surrounded by lakes; valuable as investment or sawmill purposes.

15,000 acres adjoining can be purchased on stumpage basis; ready for immediate cutting. This will be snapped up, and we advise quick action if interested. Wire or write for full particulars, prices, etc. Marcus E. Sperry, 217 American National Bank Building, Tampa, Florida.

COLONIZATION LANDS

11,000 ACRES fine agricultural land, including an entire town of some 50 dwellings and many more assets. Price \$6.50. Vestal & Haygood, Arkadelphia, Ark.

COTTON PLANTATION FOR SALE

3555 ACRES of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central Railroad; nearest shipping point, four miles from the dwelling. The land corners within half mile of one of the shipping points. A sufficiency of cabins for tenants, stables, cribs, cotton pens and all outhouses. Forty-five head of mules and horses, cows, farming implements and feedstuff. Price very low. Terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner of the property.

FARMING LANDS

WE OWN and offer for sale on easy terms more than 100,000 acres of farming lands in Louisiana and Mississippi. Anyone interested in Southern Investments should write us direct and save the middleman's profit. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

FARM AND RANCH LANDS

80,200 acres Durango,	price \$1.75 per acre
80,253 acres Coahuila,	price 3.00 per acre
100,090 acres Sonora,	price 3.00 per acre
375,360 acres Durango,	price 3.00 per acre
162,783 acres Chihuahua,	price 2.00 per acre
135,147 acres Durango,	price 3.00 per acre
230,000 acres Coahuila,	price 1.50 per acre
3,500,000 acres Chihuahua,	price 2.50 per acre
405,600 acres Chihuahua,	price 2.00 per acre
30,690 acres Tamaulipas,	price 3.50 per acre
70,000 acres Chihuahua,	price 1.50 per acre
28,000 acres Chihuahua,	price 3.50 per acre
103,355 acres Tamaulipas,	price 2.25 per acre
179,648 acres Tamaulipas,	price 2.25 per acre
80,250 acres Coahuila,	price 2.75 per acre
1,115,640 acres Tamaulipas,	price 2.50 per acre
1,336,365 acres Sonora,	price .75 per acre
191,000 acres Sonora,	price .75 per acre
60,000 acres Durango,	price 4.50 per acre
29,000 acres Durango,	price 2.00 per acre
100,000 acres Sinaloa,	price 5.50 per acre

Cass & Fry, 30 City National Bank Building, El Paso, Texas.

PECAN ORCHARDS

VALDOSTA, GEORGIA, PECAN PLANTATIONS.—Pecan culture offers largest returns; five-acre tract on easy payments assures a steady growing income; we take care of orchards for four years; 800 acres under cultivation in budded paper-shell pecans. Write for booklet. South Georgia Real Estate & Development Co., Valdosta, Ga.

BUY A FIVE-ACRE PECAN ORCHARD in Alabama, "The Land of Plenty." I have fifty tracts of five acres each admirably adapted to this profitable crop. I manage tracts for non-resident owners if preferred, and can furnish best of references. Investigation invited. Write for full information and terms. Oscar V. Case, Fort Payne, Ala.

APPLE ORCHARDS

APPALACHIAN APPLE ORCHARDS on the sunny slopes of the Blue Ridge Mountains in Northeast Georgia, the established natural home of the apple, offers an unequalled investment opportunity with every assurance of large permanent dividends. Get in on the wonderful development at the beginning. Write for our easy terms. It is your chance. Appalachian Apple Orchards, Tenth Floor Candler Bldg., Atlanta, Georgia.

400-ACRE APPLE FARM: 20,000 bearing trees; yearly profit \$15,000; located in Arkansas apple belt; \$80 per acre for short time. Vestal & Haygood, Arkadelphia, Ark.

CABBAGE PLANTS

AN ACRE OF CABBAGES near a town or village will net over two hundred dollars. We have twenty-five acres in cabbage plants of all improved varieties, grown in the open air, and are positively frostproof. Will make large heads. Price, 1000 to 5000, \$1.25 per thousand. Special prices over 5000. Packed in neat boxes and tied in bunches if desired. Special express rates. The Sea Island Plant & Seed Co., Meggetts, S. C.

FARM, FRUIT AND TRUCK LANDS

ALABAMA

FOR A HOME OR FOR INVESTMENT let us write you interestingly of more than 100,000 acres of desirable land which we have for sale at wonderfully low prices in Alabama. Any location, large or small farm, pasture and fruit lands. Picking out bargains throughout the State is our daily business. Alabama State Agricultural Land Co., Center, Ala.

ARKANSAS

10,000 ACRES unimproved land; good general farming, all level, well located to railroads, schools and churches; good soil. Price \$6 per acre. J. D. Reynolds, Camden, Ark.

FLORIDA

FLORIDA winter home and celery farm, 10 acres, subirrigated, facing St. Johns River; finest fishing and shooting; beautiful bungalow, surrounded by orange trees. Address Cecil Gabbett, Sanford, Florida.

10-ACRE ORANGE GROVE on main thoroughfare to Sulphur Springs; paved street; has 600 bearing trees; two-room house in good condition; large new chicken-house; new toolhouse; well fenced; trees in excellent condition. Attractive as suburban building property. Good car service. A gilt-edge proposition for \$7500. Marcus E. Sperry, 217 American National Bank Bldg., Tampa, Fla.

WHY PALMETTO LEADS.—The 800,000 coxes of fruits and early vegetables attests the superiority of soil, climate and irrigation necessary to produce such crops. The ease with which such crops are handled by rail and water make it an ideal place for fruit and vegetable growing. The Manatee River, Terra Cina and Tampa bays furnish ideal salt-water fishing, boating and bathing. For further information address The Manatee River Board of Trade, Palmetto, Florida.

FLORIDA FARMS ARE FORTUNES.—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

WINTER HOME SEEKERS. correspond with F. T. Adams, Pineland, Fla.; situated on Pine Island, Lee county, the most delightful climate in the world. I took 12 acres of land, cost \$50 per acre, last February, cleared it and planted in grapefruit grove. I am offered \$4000 for the grove now, but I planted it this week in onions, cucumbers, tomatoes and cabbage. I want to clear \$4000 by April 1 and still have the grove. Those wanting homes, come and see mine. F. T. Adams, Pineland, Fla.

FLORIDA FRUIT AND TRUCK LANDS.—We offer 10-acre tracts in that part of the State of Florida lying in Hillsborough county and Lake Butler region, in the Pinellas peninsula, on the west coast of Florida, on the Gulf of Mexico; with its elevation and rolling hills is especially suited for fruits of all kinds—grapefruit, oranges, grapes, dates, figs, bananas, peaches and other fruits, as well as vegetables, potatoes, corn, beans, peanuts and all the varieties that can be produced anywhere. The Tarpon Springs district offers the most favorable conditions for farmer, home seeker and investor. Fertile lands in small tracts, easy monthly payments; guaranteed title. Investigation invited. If you want a bargain and a home in the most desirable part of Florida, write now for particulars and reservation. Tampa & Tarpon Springs Land Co., Tampa, Florida.

LOUISIANA

FORTY-ACRE TRUCK FARMS for sale in the famous strawberry belt of Louisiana; on main line of Illinois Central Railroad. Price \$25 per acre on easy terms. Similar lands only a few miles distant are selling as high as \$75 per acre. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

LOUISIANA LANDS.—We make a specialty of improved farm lands, and on application will mail free list giving price and description of more than a hundred tracts, from 15 acres to 2400 acres. Also write us for hardwood, cut-over and colonization propositions from 1000 to 60,000 acres. Grace Realty Co., Plaquemine, La.

HEADQUARTERS FOR NORTH LOUISIANA LANDS.—Large and small tracts, suitable for plantations, small farms, orchards or truck gardens. Climate, soil and health conditions here are unsurpassed. The staple crops of the North grow in this section alongside of cotton and cane. A great stock country. Write for particulars, stating your requirements. References, my customers and any bank in Shreveport. W. A. Jones, Authority on North Louisiana Lands, Shreveport, La.

MISSISSIPPI

FORTY-ACRE FARMS in George county, Mississippi, 35 miles northwest of Mobile. This is one of the most-favored general farming sections of the entire South, and no better values can be found anywhere. Price \$25 per acre on easy terms. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

NORTH CAROLINA

WANTED—Men to become independent farmers in Eastern North Carolina, the "Nation's Garden Spot." Leads for large profits on small capital. Write for booklet. C. Van Leuven, 815 Southern Bldg., Wilmington, N. C.

TENNESSEE

FOR SALE—125 acres good farm land, one-half mile of railroad station, church and good school; 105 acres in cultivation; good new barn; no house. Price \$25 per acre; terms. Address Box 150, Knoxville, Tenn.

TEXAS

FOR SALE—235 1/4 acres prairie land, located on Santa Fe Railroad and on public road (shelled) only 13 miles from Beaumont and one-quarter mile from Fannett; suitable for general farming or for subdividing into smaller tracts. Title perfect. Price \$27.50 per acre. Also other lands suitable for subdivision. Texas Realty Co., Beaumont, Texas.

JAS. GOODE REAL ESTATE CO., ranch and irrigated lands. Office, Orient Hotel, Pecos, Tex.

THE BLACK LANDS OF NORTH TEXAS are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Godwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Fount Ray, Decatur, Texas.

2164-ACRE FARM on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

TEXAS COAST COUNTRY BARGAIN.—8000 acres fruit and general farm land surrounding a railroad station at small town 55 miles from city; 500 acres now in cultivation; only \$12 per acre; terms if desired. C. H. Stanciliff Land Co., Houston, Texas.

ORANGE LAND.—Texas gulf coast orange, fig and garden farms; \$15 down and \$15 per month; black loam prairie; good roads, schools, churches and markets; between Houston and Galveston. Send for illustrated literature. Agents wanted. L. Bryan & Co., Houston, Texas.

RICHEST FARM AND FRUIT LANDS. IN FAMED BEE COUNTY, 50 MILES FROM GULF, IN THE RAIN BELT.—Big water ranch, 18,700 acres, in small tracts, 40 to 640 acres, each facing roadway; close to railroad; good automobile roads; finest black sandy loam; clay subsoil; no rock; practically no waste land; gently undulating; perfect drainage; good water; coming truck and citrus fruit section; can raise winter and summer crops; then plant cotton or corn; climate balmy and healthy; golf breeze makes summer nights delightful; no malaria nor mosquitoes; extensive development going on. Write for booklet. Low price; easy terms. If wanted, will sell 5000 or 9000 acres in a solid block at especially attractive figure. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

WELL-IMPROVED FARM FOR SALE.—500 acres, adjoining same quality as land described next above; 300 acres in cultivation, all fenced and cross-fenced; excellent farm improvements; best in that section of country; ideal Southern home. For quick sale at low price. Terms, 1 to 5 years. Write for full particulars. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

10,000 ACRES Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

THE FRIO VALLEY WINTER GARDENS. La Salle county, Southwest Texas, colony of 100,000 acres level rich black sandy loam in famous artesian belt; growing oranges, figs, Bermuda onions. We are opening Fowlerton, a new town on new railroad in heart of the colony. Guaranteed improvements on town-site. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plans, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

COTTON AND CORN LAND.—12,500 acres, near two good railroads, being one mile from one and two miles from the other; splendid colonization tract; at \$10 per acre; one-fourth cash; balance 6 per cent. Address owner, Dr. C. S. Preston, 1007 Scanlan Bldg., Houston, Texas.

Classified Opportunities

[CONTINUED FROM PAGES 96 AND 97.]

IRRIGATED LANDS.—Parties in the North, East and Middle West interested in improved and unimproved irrigated lands and ranch property in the great Pecos section, communicate with us. Pawkett & Davis, Pecos, Tex.

I HAVE a client who owns 12,000 acres of the finest irrigable land in Texas; inexhaustible water at shallow depth; adjoining land bringing fancy prices now. He intends subdividing and selling at \$100 per acre with water on it. In order to finance his proposition he will sell 2000 acres of this land at \$10 per acre. You can quadruple your money in three years on this proposition. Will bear closest investigation. N. R. Lowry, Austin, Texas.

FOR SALE.—In the famous Houghton and Robinson ranch, in Runnels county, Texas, 4 miles from railroad station, 275 acres of first-class prairie farm land, ready for the plow; no better land in Texas than this for the price; only \$22 per acre; cash, \$2000; balance from 1 to 7 years with 8 per cent. interest.

Also, a 150-acre farm, mostly good black land, 7 miles south of Austin, the capital city of Texas, at \$55 per acre.

If you want one of these choice bargains or any other good real estate, see or write Carl Wendlandt, Austin, Texas.

MACHINERY AND SUPPLIES

FOR SALE.—Twenty-one miles thirty and thirty-five pound relay rails, now in track; delivery about April 1. Address J. R. Hackett, general superintendent Flint River & Northeastern Railroad, Moultrie, Ga.

WANTED.—Every consumer in the Southwest to know that the Texas Rolling Mill Company of Fort Worth, Texas, manufactures track spikes, track bolts, machine bolts and nuts; also standard sizes of bar iron. One hundred tons always in stock. Prompt shipments our specialty. Satisfaction guaranteed.

KEY MACHINES

HARRISON KEY FILING JIG, the greatest invention of the age; enables anyone to make perfect duplicate pin tumbler keys; no misfits; saves blanks; price within reach of everyone. Harrison & Co., 81 New St., N. Y.

DREDGE MACHINERY

DREDGE MACHINERY.—Osgood, second-hand, good condition; ton dipper; value \$5500; will sell for \$4500. Address J. L. Connell, Inverness, Fla.

FINANCIAL

8 PER CENT. 5-YEAR OKLAHOMA FARM MORTGAGES.—Yes, rate is high, but sure and easily paid; conditions warrant it, and you get benefit; lands cheap, rich; values doubling; 25 years' experience in Southwest; 10 years bank cashier here; know people, lands, laws, resources, local conditions; never lost a mortgage nor had a title contested; abundant references; circular; investigate. J. G. James, Roff, Oklahoma.

SAVANNAH, GA.—Real estate loans paying 6 per cent. to 7 per cent. to the investor; absolutely safe. Beautiful sites for winter homes at Vernon View, the salt-water place near Savannah on the Grand Prize Course; ideal winter climate. G. A. Mercer, Law and Real Estate, Savannah, Ga. References: Any bank or trust company in Savannah.

PROFESSIONAL

WHAT'S THE USE TO INVENT if another thought of it first. Get an "Engineer's Search" before you lose time and money. Inventor's Pocket Library will protect you. Sample for stamp or 25c. on approval. Catalog, Engineer Searching Co., Fleming Bldg., Washington, D. C.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER and Patent Lawyer, Suite 40 Victor Bldg., Washington, D. C., Member Bar U. S. Supreme Court. Patents and Trademarks; Patent Suits for Infringement. Mr. Brown is especially qualified to prosecute cases in Patent Office and patent litigation from both Engineering and Legal standpoints, having been Examiner in U. S. Patent Office for nine years. Send sketch for advice.

PATENT YOUR IDEAS.—\$100,000 offered for one invention, \$500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F street, Washington, D. C.

IDEAS WANTED.—Manufacturers are writing for patents procured through me. Send for free 72-page guide and "Stepping Stones" (containing over 200 inventions wanted). Personal services. Clients' patents sold free. Trade-marks registered. R. B. Owen, Dept. 12, Washington, D. C.

PATENTS Secured or Fee Returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

PATENTS FOR SALE

WE HAVE recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: Dr. H. R. Smith, thermometer case; David F. Sneeberger, shock-absorbing coupling; Wm. E. Moreland, bale tie; Wm. C. Moore, fluid meter faucet; Messrs. Lamb & Davies, water-delivering apparatus; F. S. Berney, steam-shovel attachment; A. E. Baker, anti-slipping device for shoes; Wm. S. Ely, support for compass; Messrs. Channell and Henry, horseshoe process; Sidney R. Burnett, vehicle brake; Albert C. Freese, loose-leaf binder; Chas. Eschenbruecher, game table; E. R. Springer, lock; W. W. Robbins, adjustable milk stool; W. S. Robinson, insect trap; Mrs. Flora Quilty and Wm. H. Haskins, window sash; Vivian T. and Hubert E. Moys, liquid measure; Mrs. Helen T. Kellogg, adjustable kettle protector; John F. Lokowich, oil can; A. E. Marshall and Frank J. Chamrod, railroad tie; Artie Martin, lawn sprinkler; Wm. M. Thomas, self-souping device for washbasin.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

GOVERNMENT PROPOSALS

PROPOSALS FOR CAST-IRON CAR Wheels, Copper Wire, Hose, and Long-leaf Yellow-pine Car Lumber. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. January 24, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 671) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 611 Whitney Central Building, New Orleans, La., and 1098 North Point Street, San Francisco, Cal., also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., December 27, 1911. Sealed proposals will be received in this office until 3 o'clock P. M. on the 4th day of February, 1912, and then opened, for the construction of a one-story and-basement brick and stone faced building, covering approximately 5000 square feet ground area, first floor of fireproof construction, the roof (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures), for the United States Postoffice at Goshen, Ind., in accordance with drawings and specifications, copies of which may be obtained from the custodian of site at Goshen, Ind., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

F. W. R. C. A. P.
J. W. G. N. S. T.
C. R. B. E. C. H.
E. C. S. C. W. S.
N. B.—Bidders are required to return drawings and specifications without marks, notes, or mutilations thereon. The Government frank sent to intending bidders is to be used only for the return of drawings and specifications. General contractors who desire to submit lump-sum bids will be furnished with one set of drawings and specifications free, and one additional set will be furnished such contractor upon the receipt of a certified check for \$100, payable to the Treasurer of the United States, the proceeds of which will be retained until the return of the drawings and specifications in good condition to this office.

Notice.—There is on file in the plan room of the Supervising Architect's Office a set of the drawings and specifications for general use of subcontractors, etc.

U. S. ENGINEER OFFICE, 320 17th St. N. W., Washington, D. C., December 9, 1911. Sealed proposals for dredging in Anacostia River, D. C., will be received here until 12 M. January 8, 1912, and then publicly opened. Information on application. W. C. LANGFITT, Lt.-Col., Engrs.

U. S. ENGINEER OFFICE, Jacksonville, Fla., December 22, 1911. Sealed proposals for removing wreck of the dredge "Hester" in channel from Clearwater Harbor to Tampa Bay, Fla., will be received at this office until 12 M. January 19, 1912, and then publicly opened. Information on application. J. R. SLATTERY, Capt., Engr's.

U. S. ENGINEER OFFICE, Mobile, Ala., December 22, 1911. Sealed proposals for construction of the 80-foot twin-screw motor survey boat Dauphin will be received at this office until 11 A. M. January 22, 1912, and then publicly opened. Information on application. C. A. F. FLAGLER, Major, Engrs.

NEW BOND OFFERINGS

Bonds For Sale

For Sale.—\$240,000 Mecklenburg County Bonds to run 22 years; coupons; 5 per cent. interest, payable May 1 each year, and not less than five bonds to be paid each year on May 1. These bonds are issued for permanent road improvement in five magisterial districts in the county. Bonds to be delivered March 1, 1912, and paid for in cash at the Treasurer's office in Boydton, Va. The interest for March and April, 1912, to be deducted from the purchase of the bonds. Bids will be opened by the full Board in session at Boydton, Va., January 29, 1912. A certified check of \$1000 must accompany each bid. The Board reserves the right to reject any bid. Address bids to Chairman Board of Supervisors, Boydton, Va.

For information address any one of the Committee.

L. H. HAYES, Union Level, Va.
L. GREGORY, Chase City, Va.
R. T. GORDON, Clarksville, Va.
L. THOMAS, Skipwith, Va.
C. S. HUTCHESON, Clarksville, Va., R. F. D. No. 4
W. H. RYLAND, Dockery, Va.
SAML. A. WARREN, Bracey, Va.
L. J. PEOPLES, Kents, Va.
Committee.

December 18, 1911.

Notice to Bond Buyers

The City of Manchester, Meriwether county, Ga., will receive sealed bids until the 15th day of February, 1912, at 12 o'clock noon, for the purchase of \$15,000 Electric-Light Bonds, interest, 5 per cent. semi-annually. Bonds mature \$1500 on the first day of each successive January, 1912 to 1914. Gold bonds of the denomination of \$500. Coupon, but may be registered. Dated January the first, 1912, and both principal and interest payable at the Hanover National Bank, New York City. A certified check for \$300 must accompany each bid.

Bidders may submit form of bond to be issued and include cost of same in their bid. The successful bidder will be required to accept bonds at the office of the City Clerk. Usual rights reserved.

By order of the Mayor and Council.
JAMES S. PETERS,
City Clerk and Treas.
This December 29, 1911.

Notice to Bond Buyers

The City of Sweetwater, Nolan county, Texas, will receive sealed or open bids until the second Monday in January, 1912, at 12 o'clock noon, for the purchase of twenty-five \$1000 Street-Improvement Bonds, interest 5 per cent. semi-annually. Bonds mature in 40 years, with 20-year option. Payable at Sweetwater, Texas, or Hanover National Bank, New York, at option of holder. Certified check of \$500 must accompany each bid.

Right is reserved to accept or reject any and all bids. Bonds dated October 25, 1911.

Address
T. B. THARPE, Mayor;
or J. W. McDUGALL,
City Attorney of Sweetwater, Texas,
or L. S. POLK, City Secretary.

Sale of \$30,000.00 of Thirty-Year Coupon Bonds of the City of Greensboro

Until 2.30 P. M. January 10, 1912, the undersigned will receive sealed bids for all or any part of an issue of thirty thousand dollars of thirty-year 5 per cent. coupon bonds of the City of Greensboro, N. C., for school purposes, in denominations of \$1000 each, interest payable semi-annually on the first days of January and July.

The validity of these bonds has been passed upon by Messrs. Caldwell, Masslich & Reed, No. 100 Broadway, New York, and they will be certified and delivered by the United States Mortgage & Trust Co., No. 55 Cedar street, New York.

All proposals must be made upon forms furnished by the City of Greensboro, and must be accompanied by a certified check on some reputable bank for 2 per cent. of the amount of bonds bid for, payable to the order of the Treasurer of the City of Greensboro, N. C. Bids will be opened by the City Commissioners on January 10, 1912, at 2.30 P. M., and the right is reserved to reject any and all bids.

For further information and for blank proposals address

T. J. MURPHY, Mayor,
Greensboro, N. C.

December 20, 1911.

Notice

Notice is hereby given that sealed bids will be received up to the hour of four (4) o'clock P. M. on the 12th day of January, 1912, at the office of the City Clerk, in City Hall Building, Port Arthur, Texas, for the purchase of \$100,000 5 per cent. bonds of the city of Port Arthur, Texas, bearing date of the 10th day of October, 1911, in denominations of \$1000. These bonds are issued for the purpose of making street improvements, and mature on the 10th day of October, 1951.

The city reserves the right to redeem the first \$25,000 of said bonds on or after five years from their date; the next \$25,000 on or after ten years from their date; the next \$25,000 on or after fifteen years from their date, and the last \$25,000 of same on or after twenty years from their date. The bonds have not yet been printed or approved, but the record of proceedings for their issuance up to November 4, 1911, has been examined and passed, though not formally approved

by the State Attorney-General and City Attorney. Bids will be received subject to approval and certificate of the bonds by the State Attorney General when presented to him for that purpose, but otherwise no bids conditioned on legality will be considered. All bids must be accompanied by certified check for \$500 on a bank in the City of Port Arthur, Texas, and bonds must be paid for at the office of the City Treasurer, Port Arthur, Texas, when ready for delivery. The right is reserved to reject any or all bids.

Dated at Port Arthur, Texas, this 11th day of December, 1911.

G. N. BLISS,
Mayor Commissioner.

\$10,000 5% Bonds For Sale

Beaufort, N. C.

The Commissioners of the Town of Beaufort will on the 11th day of January, 1912, at 12 o'clock M., at the town hall, open bids for the Coupon Bonds of the said town in the amount of ten thousand dollars (\$10,000) to cancel outstanding indebtedness.

These bonds will be issued in the denominations of not less than \$100 and not more than \$1000; will bear interest at the rate of five per cent. per annum; interest payable semi-annually, and will mature — years from their date.

Bidders are requested to designate the denomination of the bonds. These bonds will not be sold for less than par, and no bid will be considered unless accompanied by a certified check for at least 1 per cent. of the amount bid.

Any further information desired will be furnished upon application to the Town Clerk.

A. T. GARDNER, Mayor,
THOS. THOMAS, Town Clerk,
Beaufort, N. C.

\$25,000 5% Bonds

The Mayor and Council of the city of Claxton, Georgia, will receive sealed bids until 12 o'clock noon January 16, 1912, for the purchase of the following bonds of said city:

\$25,000 water-works and electric-light bonds. Said bonds are of the denomination of \$1000 each and bear interest at the rate of 5 per cent. per annum. The interest is payable annually at such place as may be designated by the purchaser.

Five thousand dollars of said bonds is to become due and payable at the end of ten years, ten thousand dollars at the end of twenty years, and the remaining ten thousand at the end of thirty years.

Bonds will be dated January 1, 1912. All bids must be accompanied by a certified check for 2 per cent. of the amount of the bonds bid for.

This bond issue was validated by the Superior Court of Tattnall County, Georgia, on the 21st day of December, 1911.

The Mayor and Council reserve the right to reject any and all bids.

Direct all bids to "Mayor and Council, Claxton, Ga."

W. F. FREEMAN, Mayor;
D. C. SWINDEL,
J. C. MILLER,
R. B. TIPPINS,
R. B. PARKER,
Counsel.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

WATERWORKS AND SEWERS

Proposals for Water-Works, Albemarle, N. C.

Sealed proposals will be received by the Mayor and Board of Commissioners of the town of Albemarle, N. C., until 8 P. M. January 16, 1912, for Building a System of Water-Works.

The work will embrace pumping station, clear-water basin, deep well, 2 motor-driven turbine pumps, 750 g. p. m. each, switch-board, and one mile of pole line, tower and tank, and about 5 miles of 6 to 10-inch pipe line.

Plans and specifications will be on file at the office of the Mayor in Albemarle and at the office of the Engineer in Charlotte. Copies of specifications, bidding blanks, etc., may be obtained from the Engineer. A complete set of blueprints will be furnished on payment of three dollars to cover the cost. No bid will be considered unless accompanied by a certified check for not less than 5 per cent. of the amount of bid as an evidence of good faith.

The right is reserved to reject any or all bids.

M. J. HARRIS, Mayor.
J. E. EWING, Clerk.

Engineer:
GILBERT C. WHITE,
Charlotte, N. C.

Electric Light Plant and Water-Works, Washington, Ga.

CHANGE OF DATE.

Sealed proposals will be received by Boyce Ficklen, Jr., City Clerk, Washington, Ga., until twelve o'clock noon January 20, 1912, for constructing a new power plant, adding to the present water-works, and overhauling and extending the present electric light and power transmission system in the City of Washington, Ga. In accordance with the plans and specifications drawn by Westinghouse, Church, Kerr & Co., Engineers, and now on file in the office of the City Clerk.

Copies of the plans and specifications may be obtained from the City Clerk upon deposit of fifty dollars (\$50) with the said Clerk, which amount will be refunded upon the return of such copies of plans and specifications.

The specifications are divided into two parts, main and supplementary, and bids are desired as follows:

A. To furnish all material and do all construction called for by the plans and specifications; this bid to be divided into two parts, one to cover the main specifications and the other the supplementary specifications.

B. This bid shall cover construction of the building and foundations called for, but not to include the installation of machinery or the construction of transmission lines.

C. This bid to cover the installation of all machinery and the construction of all transmission lines as called for in the plans and specifications, but not to include the construction of the building and foundations for machinery; this bid shall have separate bids called for under the main and supplementary part of the specifications.

All bids by one bidder may be enclosed in one envelope. The right to reject any and all bids is reserved.

Each bidder shall enclose with his bid certified check for 5 per cent. of the amount of his bid to guarantee his executing contract and bond in accordance with his bid.

The successful bidder is to furnish bonds properly executed in a recognized company and approved by the Engineers, as surety for the full performance of all guarantees called for in the specifications, these bonds to remain in force for the full periods of the respective guarantees that they cover.

MAYOR AND COUNCIL
OF WASHINGTON, GA.

By Boyce Ficklen, Jr., Clerk.

Construction of Waterworks Extension

Sealed proposals will be received by the Board of Mayor and Aldermen of the City of Johnson City, Tennessee, until 7 P. M. Thursday, February 1, 1912, for furnishing material, machinery and labor for building a gravity water supply, embracing approximately twelve and one-half miles of sixteen (16) inch cast-iron pipe with appurtenances, one-half mile of eighteen (18) inch, one and one-eighth miles of ten (10) inch cast-iron pipe line, and one 4,000,000-gallon reservoir.

Plans may be seen at the office of the City Commissioner or the Consulting Engineers, and specifications may be obtained from either.

Certified check on a local bank for five per cent. of the amount of the bid will be required.

The right is reserved to award separately or as a whole the numbered items shown in the proposal blank; to reject any or all bids, or to accept any bid that may be to the best interest of the city.

P. F. McDONALD,
City Commissioner.

WM. R. POWDER,
Recorder.
THE J. B. McCRAIRY CO.,
Consulting Engineers,
Third National Bank Building,
Atlanta, Georgia.

Sewerage System and Disposal Plant

CHANGE OF DATE.

Sealed proposals will be received by the City Council of the City of Union Springs, Alabama, until 11 A. M. January 18, 1912, for the construction of a sanitary sewerage system and disposal plant, complete.

Approximately 11 miles of 8" to 15" pipe sewers and appurtenances. Plans and specifications on file with P. L. Cowan, City Clerk, Union Springs, and in the office of the Engineer, Attalla, Ala. Specifications will be mailed from either office on application. Drawings can be obtained from Engineer on deposit of two dollars.

S. P. RAINER, Mayor.

Engineer:
WILLBURN HILL, Attalla, Ala.

MISCELLANEOUS

Pipe and Special Castings

Sealed bids will be received at the office of the Board of Water Commissioners in the city of Macon, Georgia, until 8 P. M. on the 25th day of January, 1912, for furnishing f. o. b. cars Macon, Georgia, approximately
1125 tons twenty-inch,
360 tons twelve-inch,
380 tons ten-inch,
176 tons eight-inch,
120 tons six-inch,
all Class "B" cast-iron piping, together with 150 tons special castings.

Pipe and specials to be in accordance with specifications now on file in the office of the Board of Commissioners, which said specifications can be had upon application to the Board.

The Board of Water Commissioners in considering said bids reserves the right to fix definitely the quantity of pipe, whether more or less than above indicated.

The Board of Water Commissioners also expressly reserves the right to reject any and all bids.

Each bidder must state in bid submitted time necessary for delivery of pipe and must guarantee compliance with bid.

Bids must be sealed and addressed to the Board of Water Commissioners, Macon, Georgia, and marked "Bids for Piping."

BOARD OF WATER COMMISSIONERS.

By W. H. Fetner, Chairman.

Municipal Building

Office of the City Clerk,
Council Chamber,
Portsmouth, Va., December 20, 1911.

Sealed proposals will be received by the Public Property Committee of the City Council of Portsmouth, Virginia, up to 12 o'clock noon on the 6th day of February, 1912, for the erection of a municipal building in accordance with plans and specifications furnished by B. F. Smith, Architect, Washington, D. C.

Plans and specifications may be seen at the office of the City Clerk or at the office of the Architect, or they may be obtained of the City Clerk by depositing with him an acceptable certified check for fifty dollars (\$50) as a guarantee that such plans and specifications will be returned to him in good condition within ten (10) days from the date they are carried away, when said certified check so deposited will be returned; otherwise it will be retained in full payment for these plans and specifications.

Forms of proposal will be furnished bidders by the City Clerk or the Architect, and no proposal will be considered unless it be made on this form and in strict compliance with same.

Proposals must be accompanied by an acceptable certified check or "trust company's bond" in the sum of five hundred dollars (\$500), made payable to the City Clerk, as a guarantee that the successful bidder will execute a contract to be approved by the City Attorney and file an acceptable "surety bond" within thirty (30) days from date of award of contract, to amount of fifty per cent. (50%) of his bid, made payable to the City of Portsmouth, Virginia, as a guarantee for the faithful performance of his contract, and in the event of his not executing the contract or filing said penalty bond within said time the said certified check or "trust company's bond" deposited with the proposal is to become the property of the City of Portsmouth as liquidated damages for such failure.

Each proposal must state the date and time for completion of the building and its appurtenances, ready for use and occupancy.

Payments will be made in the sum of eighty-five per cent. (85%) of work performed and material delivered on the site of the building, in compliance with specifications in estimates, approved of from month to month by the Public Property Committee, as the work progresses, reserving fifteen per cent. (15%) of the amount of said work and material until the building is completed and accepted by the Public Property Committee.

The Public Property Committee reserves the right to reject any or all proposals or to accept any one of them in its discretion.

Address proposals to L. P. Slater, City Clerk, and marked "Proposal to Erect a Municipal Building," or "Proposal to Erect and Furnish a Municipal Building," or "Proposal to Furnish a Municipal Building."

S. B. HUTCHINS, Chairman;

L. PRIVETT, Vice-Chairman,

Public Property Committee.

Church

The building committee of the First Methodist Episcopal Church South, Macon, S. C., will receive bids for the erection and completion of their new church up to 12 o'clock noon on the 6th day of February, 1912. Each bid must be accompanied by certified check or satisfactory bidder's bond for \$1000 to show good faith. The right to reject any and all bids is reserved. Plans and specifications on file with the committee and at the office of Wheeler & Stern, Architects, Charlotte, N. C. Architects will loan plans at their discretion to responsible bidders on deposit of check for \$50.

W. STACKHOUSE, Chairman.

P. B. HAMER, Secretary.

December 23, 1911.

Garbage Wagons

SPECIAL BOND ISSUE OF 1911.

Sealed proposals will be received in the office of the City Clerk of Muskogee, Oklahoma, until 10 o'clock A. M. January 9, 1912, for the furnishing of six two-horse Garbage Wagons to be delivered within 20 days after award of contract. The city reserves the right to reject any or all bids.

Certified check for one thousand (\$1000) will be required with each bid. File all bids with Charles Wheeler, Jr., City Clerk, together with drawings and plans of wagons that are proposed to be furnished.

ERNEST COOK,
Commissioner of Public Safety.

Court House

OFFICE OF COMMISSIONERS OF PUBLIC BUILDINGS OF CLEBURNE COUNTY, ARK.

Heber Springs, Ark., December 27, 1911.

Notice is hereby given that sealed proposals will be received at the office of the Commissioners of Public Buildings at Heber Springs, Arkansas, up to 12 o'clock noon Thursday, the 1st day of February, 1912, for the construction and completion of a Court-house Building at Heber Springs, in Cleburne county, Arkansas, according to the plans and specifications of Clyde A. Ferrell, Architect, of Little Rock, Ark., heretofore adopted and on file at the office of the Commission and at the office of the said Architect, Clyde A. Ferrell, State Bank Building, Little Rock, Ark. Contractors desiring to take away plans and specifications will be accommodated in sequence of application to the Architect, provided a deposit of fifty dollars accompanies each application. This deposit will be forfeited if plans are retained longer than ten days or if contractor obtaining same fails to submit a proposal. All bids shall be made upon the work as a whole and shall be submitted on special blank forms to be obtained from the architect. Each bid shall be accompanied by a certified check of \$1000, made payable to the undersigned. The check of any bidder who fails within 15 days after being notified of the award of the contract to execute an approved surety bond in double the amount of the contract for the faithful performance of the contract based on his bid will be forfeited to the county as agreed and liquidated damages. The right is reserved to reject any and all bids.

J. R. BAKER,
J. W. HARRY,
Commissioners of Public Buildings.

Street Paving

City of Orangeburg, S. C.,

December 15, 1911.

Sealed proposals will be received by the special paving committee of the City Council of the City of Orangeburg, South Carolina, at the City Hall in the City of Orangeburg, up to 7:30 o'clock P. M. on Monday, January fifteenth (15th), 1912, for Grading and Paving of a part of East Russell street from Lowman street to North Railroad avenue, and a part of South Broughton street from West Russell street to Hampton street, consisting in the aggregate of approximately five thousand eight hundred (5800) square yards of Vitrified Brick.

A certified check in the sum of five hundred (\$500) dollars, payable to L. H. Wannamaker, City Clerk and Treasurer of the City of Orangeburg, must accompany each proposal.

Specifications can be obtained from the said City Clerk and Treasurer or engineer, and plans can be seen at the office of the said City Clerk and Treasurer on and after January 1, 1912.

The right to reject any or all bids is hereby reserved.

By order of the Mayor and City Council of the City of Orangeburg, South Carolina:

W. G. SMITH, Chairman;

R. F. BRYANT,

W. W. CRUM,

Special Paving Committee.

L. H. WANNAMAKER,
City Clerk and Treasurer.

Let Us Help Solve Your Explosive Problems

Are you always sure the explosive used in your quarries is as efficient as a Du Pont Explosive, made exactly to meet your local conditions?

Does your cost of explosives compare favorably with results obtained?



THE ACCUMULATED EXPERIENCE OF 109 YEARS

Is at your service to give you practical information and advice regarding the selection and use of explosives for every blasting need.

Give us the data about that unsatisfactory blasting experience of yesterday and we will gladly assist you to overcome the trouble.

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Valuable Manufacturing and Commercial Property FOR LEASE IN ATLANTA

On account of our having moved our plant to a much larger site, the property formerly occupied by us on the corner of Whitehall Street and Stewart Avenue can be leased for a term of years. The property is about 12 squares from all the principal freight stations in Atlanta, and it is located on the Southern Railway, with two side tracks on the property. A suitable office building located on the property is immediately available, and from a convenient shipping and advertising standpoint this property is hardly excelled in the City of Atlanta.

For information or terms, address

VIRGINIA BRIDGE & IRON CO.

J. W. LEROUX, District Manager, ATLANTA, GA.

BRICK PLANT IN CENTRAL FLORIDA FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"
Care Manufacturers Record.

Fully Equipped Knitting Mill FOR SALE OR LEASE

Two-story substantially built brick building, with engine and boiler, situated in one of the fast growing cities of North Carolina, both rail and water shipping facilities, and good opportunity for right party. Address
BOX 308, Fayetteville, N. C.

WANTED A PURCHASER FOR A NEW STEAM LAUNDRY

Fully equipped with the very latest and best machinery, and with a good-paying and increasing custom, in the beautiful and attractive town of Wytheville, Va., the great summer resort of the South. Particulars given on application. Correspondence solicited.

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AGENCY AND JOHN J. WOHLFORD,
Wytheville, Va.

ASSETS REALIZATION COMPANY

Capital \$10,000,000

Will loan on security requiring special investigation or close supervision, and not available for bank loans. Large enterprises financed. Prompt investigation of security offered, whatever its character or location.

Correspondence invited

NEW YORK PHILADELPHIA
26 Broad St. Lafayette Bldg.
CHICAGO
First National Bank Building

Complete Saw Mill Plant, Dry Kiln and Logging Equipment FOR SALE

Mill has a daily capacity of 25,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 35 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address

ALBERT FENDIG & CO., Brunswick, Ga.

COMPLETE SAW MILL PROPERTY FOR SALE

Sawmill property at Ford River, Mich., consisting of three-band saw mill, shingle mill, tie and post mill, lath mill, docks and trams, blacksmith shop and machine shop all stocked with tools, large store and office building, large boarding-house, large barns, sixty-three houses, lands, etc., all of which will be sold at a bargain. Apply to
THE I. STEPHENSON COMPANY,
Wells, Delta County, Mich.

G. H. P. FAIRBANKS Gas or Gasoline Engine FOR SALE

First-class condition.

AMERICAN CYANAMID CO.
Keyser Building BALTIMORE, MD.

These Advertisements Too Late for Regular Alphabetical Index

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BRICK FACTORY BUILDING and FACTORY SITE FOR LEASE OR SALE ON EASY TERMS

Two-story brick factory building 200x60 feet, with ells, giving total floor space 30,000 sq. ft., with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers. Site 385x200 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroad and steamboat lines.

BARTON MYERS,

NORFOLK, VA.

MANUFACTORIES INVITED Cheap Electric Power and Labor

Bedford City, Va., offers every advantage to industrial plants generally. Has cheap electric power which is very necessary to profitable manufacturing; has good supply of labor and ample raw material of various kinds within easy reach; and is on railroad connecting with all parts of the country and seaports. Good schools, churches, healthful climate and other facilities and comforts which make it a fine place of residence.

Detailed information gladly given by the

BOARD OF TRADE

BEDFORD CITY, VIRGINIA

Modern Foundry & Machine Shop A BARGAIN

Having bought at receiver's sale a modern Foundry and Machine Shop, including a complete line of Engine and Sawmill Patterns and an amount of Mill Supplies, I am offering it at a bargain. Located in the South, close to iron and coal, with three railroads and non-union labor. This is a desirable plant for the manufacture of any line of machinery.

Address "H,"

Care Manufacturers Record.

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Business Opportunities, Timber Lands,
Realty Investments

We will take pleasure in submitting information pertaining to either of the above departments.

S. L. NUSBAUM & CO.

600 Citizens' Bank Bldg. Norfolk, Va.

Manufacturers and Wholesalers

Rated \$10,000 to \$20,000 and higher.

DO YOU WANT YOUR CUSTOMERS TO DISCOUNT YOUR INVOICES?

If so, why not give us the discounts you offer to your customers for cash? You can place your credit sales upon an 80% cash basis AT THE EXPENSE OF YOUR CUSTOMERS through their not taking your discounts.

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Our total charges are only 1% on the face of invoices paid within 15 days from date of our purchase, 2% within 30 days, and then 1% a month until paid. We charge NO INTEREST OR EXCHANGE on checks and carry accounts until they are SIXTY OR NINETY DAYS PAST DUE.

We are now using about ONE MILLION DOLLARS CASH in the purchase of some FIVE MILLION DOLLARS of open accounts a year from large and well-rated firms, whose names we keep in the strictest confidence.

Why not give our plan a trial NOW with \$5000 to \$25,000 of your present open accounts?

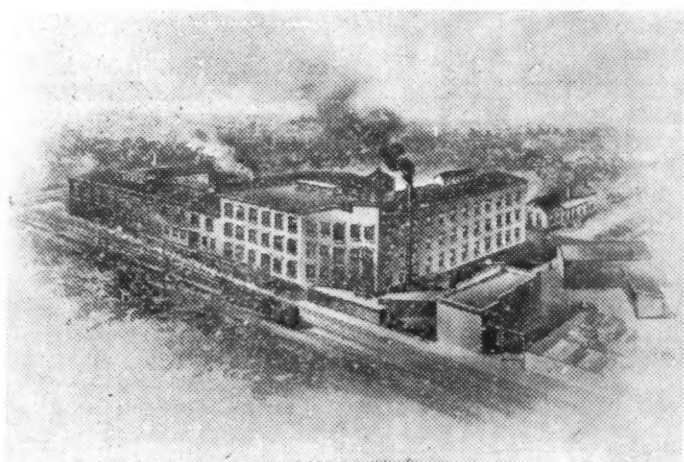
Manufacturers' Finance Company

709-710 Keyser Bldg., Baltimore, Md.

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Don't fail to buy from advertisers in the MANUFACTURERS RECORD as they are the most representative firms seeking Southern business.

Don't forget to mention the MANUFACTURERS RECORD when writing to them.

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Manufacturing plant or warehouse on Bellwood Avenue, Southern Railway and A. B. & A. R. R., containing two acres of land, with 600 feet railroad frontage, three-story brick mill constructed building, 42,000 square feet floor space; elevator, electric light plant, steam heat and modern plumbing. Has 100 H. P. engine and 125 H. P. boiler. Office building separate. Owner retiring on account of ill health.

H. M. BEUTELL, Owner - - ATLANTA, GA.

SAVANNAH, GEORGIA

Fertilizer Manufacturing Center of the South

AND SIXTH LARGEST CITY IN EXPORTS IN THE UNITED STATES

THE LAND OF OPPORTUNITY. I am now offering factory sites which have access to all four railroads entering Savannah, and situated on the Savannah River, 21 feet of water, and the only available water front near the city.

I have also a few choice farming propositions with railroad and water transportation. Write me for information.

FRANK WHITNEY, Room 207 Germania Bank Bldg., SAVANNAH, GA.

Summer's Winter Quarters

Come and enjoy all the novel varieties of healthful outdoor life, where it is

Summer from January till December

Fresh water and deep-sea fishing. Motoring on hard shell roads. Drives through piney woods. Hunting, sailing, bathing, tennis. Golf on a fine nine-hole course. Ideal climate. Sunny days.

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Right on the beach. 250 outside rooms, with hot and cold running water, telephones, electric lights, and every modern convenience. Cozy, genial, homelike atmosphere. High standard of cleanliness. European plan. Rooms single or en suite, with or without private bath. Prompt and courteous service. Excellent cafe. Seafoods a specialty. Fresh vegetables from our own farm. Artesian water. Reasonable rates.

Write to **W. N. DRIVER, Manager, Gulfport, Miss.**

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MARYLAND
ENGRAVING Co.**
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ILLUSTRATIONS IN ONE
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Bargains in Machinery and Supplies.

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In stock for immediate delivery.

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40-light General Electric, speed 1350.
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Condition Guaranteed.
110-volt. 250-volt. 500-volt.
A. C. and D. C. Motors and Generators in stock. Send for Bargain List.
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24" x 12" four-side FAY ENDLESS BED PLANER

In condition to run immediately.
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Two 250 H. P. "Heine," complete, with all attachments, good for 140 lbs. pressure. Will make price low f. o. b. cars Philadelphia.

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437-39 N. Third Street, Philadelphia.

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Four 100 H. P. Portable Return Flue Boilers. 12"x15" Erie City Engine. 12"x16" Birmingham Engine. 18"x22" H. S. & G. Engine. R. Hand Knife Grinder. 10" Outside Molder.

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Engines, Generator and Deep Well Steam Heads

FOR SALE. CHEAP.
1 8x8 Erieco Engine, direct connected to a 30 K. W. 125 V. D. C. Generator.
1 13x12 Erieco Steam Engine.
1 10x36 HHH Deep Well Steam Head.
1 6x36 Cook Deep Well Steam Head.
All the above in fine condition.
COGILIN MACHINERY & SUPPLY CO.,
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We have for sale the following Bundy Steam Traps:

1 No. 105 Trap, 125 gallons per dump.
1 No. 108 Trap, 255 gallons per dump.
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Temperature 180 degrees.

These traps have never been used and are in perfect condition. Make offer on one or all.

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We have the largest stock of second-hand electric motors and generators in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds. Send for our "Monthly Bargain Sheet," showing complete stock with net prices. All machines guaranteed in good order.
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Engines, Boilers, Generators, etc.

1 22 and 40-36 Corliss Cross Compound.
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1 Allis Corliss Tandem, 22 and 24x48 Engine.
Engines direct connected to generators.
SEND for list and prices.
THE DORNER RAILWAY EQUIPMENT CO.,
Irving Park Ave., corner Southport,
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I buy, sell, rent and exchange.
The best and the cheapest.
Let me know what you have for sale and what you want to buy.
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FOR SALE

One 26"x14" Lathe. One 20"x10" Lathe. One 18"x8" Lathe. One 14"x6" Lathe. One 30 H. P. Tractor Engine. One No. 2 B. Koehring Cement Mixer. One No. 1 B. Koehring Cement Mixer. One No. 1 Smith Mixer, with gasoline engine. One No. 1 Smith Mixer, with boiler and engine. Two 125 H. P. Hor. Tub. Boilers. Two 110 H. P. Hor. Tub. Boilers. One 90 H. P. Portable Boiler on skids. Three Berlin Planers and Matchers, 4"x9". One Mississippi Planer and Matcher, 4"x14".
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1 60"x16" "Fifield," internally geared face-plate.....\$1400.00
1 48"x12" "Fifield," internally geared face-plate.....1250.00
2 42"x32" "Draper," one has taper attachment, \$1400.00 each; taper \$100.00 extra.
1 40"x18" "Fifield".....1500.00
1 40"x18" "Fifield," internally geared face-plate.....1250.00
1 38"x18" "Fifield," internally geared face-plate.....1250.00
1 33"x16" "Fitchburg".....700.00
1 32"x32" "Fifield".....1200.00
1 30"x14" "Fifield".....475.00
1 20"x10" "Perkins".....350.00
1 22"x10" "Fifield".....350.00
1 16"x6" "LeBlonde".....250.00
1 14"x6" "LeBlonde," each.....225.00

PLANERS

1 52"x52"x23" "Betts," one head.....1000.00
1 42"x38"x12" "American," open side.....2250.00
1 40"x40"x10" "Powell," one head.....900.00
2 20"x20"x6" "Sellers," one head.....150.00

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1 72" "Bickford," plain.....650.00
1 54" "Bickford," universal.....525.00
1 54" "Bickford," plain.....750.00

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1 60", one head, vertical.....400.00
1 37" "Bullard," two heads, vertical.....800.00
1 54" "Newton," horizontal.....450.00

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1 10" "Curtis & Curtis".....250.00
1 6" "Cox & Sons".....400.00
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1 No. 1 "Bignall & Keeler".....240.00

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1 No. 2 "Bilas".....450.00
1 P-1 "Ferracute".....115.00

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1 1500-lb. steam "McDougall & Potter".....900.00
1 800-lb. steam drop "Bement-Miles".....650.00
1 500-lb. "Champion Beaudry".....450.00
1 400-lb. "Champion Beaudry".....350.00
1 150-lb. belt-power "Scranton".....325.00

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1 72" "Gould & Eberhardt".....550.00
Our large, well-planned and lighted warehouse makes critical examination of any tool easy and affords the best facilities for quick and safe handling of heavy pieces.

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SPIRAL PIPE

FOR SALE CHEAP

9000 feet Galvanized Spiral Riveted Flanged Pipe, size 9". Heavy gauge, in first-class serviceable condition, suitable for dredge work, air pressure, etc. Will make very attractive price in quantities.

MARINE METAL & SUPPLY CO.,
167 South Street,
NEW YORK CITY.

GENERATORS

Direct Connected Generating Sets, 110 K. W., 440 amp., 250 volt. Speed 250 R. P. M. 160 H. P. Thompson-Ryan Dynamo and McEwen Engine.

ENGINES

1-150 H. P. N. Y. Safety, steam power, vertical.
1-65 H. P. Westinghouse, automatic.
1-100 H. P. Haberkorn, horizontal.
2-400-lb. Steam Hammers, Morgan Eng. Co.

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Used Machine Tools

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14 in. x 6 ft. Flather, Q. C. G.
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16 in. x 6 ft. Pratt & Whitney, Q. C. G.
16 in. x 8 ft. Reed.
18 in. x 6 ft. Lodge & Shipley, Q. C. G.
18 in. x 8 ft. Lodge & Shipley, Q. C. G.
18 in. x 10 ft. Lodge & Shipley, Q. C. G.
20 in. x 8 ft. Lodge & Shipley, Q. C. G.
20 in. x 10 ft. Lodge & Shipley, Q. C. G.
22 in. x 14 ft. Lodge & Shipley, Q. C. G.
24 in. x 8 ft. Lodge & Shipley, Q. C. G.
24 in. x 10 ft. Lodge & Shipley, Q. C. G.
27 in. x 10 ft. Lodge & Shipley, Q. C. G.
36 in. x 12 ft. Lodge & Shipley, Q. C. G.
36 in. x 14 ft. New Haven.

SPECIAL LATHES

24 in. x 7 ft. Lodge & Shipley Chucking Lathe.

No. 3 Lodge & Shipley Rapid Reduction Lathe.

PLANERS

36 in. x 36 in. x 10 ft. Sellers.
No. 3 Nutter-Barnes Cold Saw.
Franklin Cold Saw, 3 1/2 in. capacity.
Globe Power Hack Saw, 8 in. capacity.
Universal Power Hack Saw, 6 in. capacity.

MISCELLANEOUS MACHINES

Whitton Centering Machine.
Mumford 12 in. x 40 in. Molding Machine.
Write for complete description with prices of machines in which you are interested.

THE LODGE & SHIPLEY MACHINE TOOL CO.
CINCINNATI, OHIO

SAW MILL MACHINERY

FOR SALE

One mile 24-pound Steel Rails.
One Cylinder Barrel Stave Saw.
One Stave Jointer.
One Heading Machine.
One Gang Edger Saw.
One Power 26" Surfacers and Jointer.
One Power 44" Circular Resaw.
One 35 H. P. Sawmill, complete, with Gang Edger.
One 25 H. P. Sawmill.
All of the above is in first-class condition.

E. S. ADKINS & CO.,
Salisbury, Md.

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PIPE

PIPE for pipe lines, PIPE for drilling,
PIPE for casing, PIPE for tubing.

Complete stock, sizes 1 to 12".

Also second-hand engines, pumps, boilers, cypress and steel tanks, complete well drilling rigs.

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4 7x10 Lidgerwood Hoists, with Boilers.
1 100 H. P. Erie Fire-Box Boiler, B. S., 115 pounds.
1 10x10 Ingersoll Belted Compressor.
8000 and 10,000-gallon Steel Tanks.
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SECOND-HAND

Machine Tools

LATHES.

18x8 Lodge & Shipley, compound rest.
9"x14" Star, plain rest.
12"x5" Prentiss Bros., R. & F.
15"x6" Flather, compound rest, P. C. F.
16x6 Prentiss Bros., compound rest, P. C. F.
16x6 Reed, compound rest, taper and turn.
20x10 Prentiss, compound rest, P. C. F.
20x6 Fay & Scott, compound rest, P. C. F.
24x14 Reed, high speed.
25x12 Pratt & Whitney, C. R., P. C. F.
28x10 Putnam, C. R., P. C. F.
28x10 Gleason, compound rest, taper.
28x12 Pond, C. R., P. C. F.
32x17 Bement Miles, C. R., triple geared.
36x16 Reed, compound rest, P. C. F.
40x18 Newark, triple geared, C. R., P. C. F.
46x28 Fitchburg, T. G., C. R., P. C. F.
102x35 Bement, compound rest, T. G.
21x14 Powell, compound rest, P. C. F.
26x13 Fitchburg, compound rest, P. C. F.
84x20 Fitchburg, C. R.

SCREW MACHINES.

2x24 Jones & Lamson, flat turret.
20x6 Bardner & Oliver, friction head.
No. 2 1/2 Warner & Swasey, wire feed.
No. 2 1/2 Garvin, wire feed, friction head.
No. 1 Garvin, wire feed.
3 1/2 National Acme, automatic.
1 1/2 Gridley, automatic.
No. 6 Brown & Sharpe, friction head.
1 1/2 Smurr & Kamen, wire feed.
1 1/2, 3/4, 1" and 2 1/2" Pratt & Whitney automatics.
No. 2 1/2" Pratt & Whitney, wire feed.
No. 1 7/16" Pratt & Whitney, wire feed.

MILLERS.

No. 15 Brainerd, universal.
No. 4 1/2 Becker, plain.
No. 3 Cincinnati, universal.
No. 2 Brown & Sharpe, universal.
No. 2 LeBlonde, plain, back gears.

No. 2 Pratt & Whitney, Lincoln pattern.
No. 3 Brown & Sharpe, plain.
No. 7 Becker-Lincoln.
No. 3 Cincinnati, plain.
No. 12 Brown & Sharpe, manufacturers.

DRILLS.

25" Lodge & Davis, sliding head.
25" Barnes, sliding head.
36" Bickford, radial.
No. 25 Foote-Burk, high speed.
F 12" Baker Bros.
10-spindle Gardam, adjustable.
4-spindle Foote-Burk, gang.
25" Snyder, sliding head, tapping attachment.
7-spindle Slate, bedstead.

SHAPERS.

9" Gould & Eberhardt.
20" and 24" Hendey, friction.
13" Cincinnati, crank.
20" Gould & Eberhardt, crank.

MISCELLANEOUS.

Boring Mill, 37" Bullard, 2 heads.
Grinder, Sellers, universal tool.
Planer, 24x24x6 Pease, 1 head.
Planer, 30x30x10 Gleason, 1 head.
Planer, 36x36x12 Betts, 4 heads.
Planer, 48x48x8 Farrell, 1 head.
Planer, 48x48x15 Pond, 2 heads.
Boring Mill, 10" Pond.
Grinder, Walker, electric surface.
Grinder, No. 2 1/2 Bath, universal.
Gas Engine, 8 H. P. Fairbanks.
Hammer, 50 lbs. Bradley, compact.
Hammer, 1000 lbs. Pratt & Whitney, drop.
Gear Cutter, 16x4 Gould & Eberhardt.
Grinder, 12x42 Landis, universal.
1" Saunderson Pipe Machine.
Slotter, 16", Bement, motor driven.
No. 2 Giant Keyseater.
Brake, 8" Niagara.
Pipe Machine, 3" Jarecki.
Grinder, 20" Blount Water Tool.

Prentiss Tool & Supply Company

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**SPECIAL BARGAINS CHEAP
BEFORE REMOVAL**

Two 150 K. W. 250-volt D. C. Crocker-Wheeler Generators, direct connected to 14½"x24"x10" Wright Tandem Compound Engines, 200 R. P. M.
One 100 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14½"x14" Wright Horizontal Engine.
One 1000-gallon Blake Underwriters' Fire Pump, size 18"x10"x12".

BOILERS

Three 72"x20" Horizontal Return Tubular, 175 H. P. each, 125 lbs. steam.
Three 66"x18" Horizontal Return Tubular, 125 H. P. each, 110 lbs. steam.
Two 66"x16" Horizontal Return Tubular, 100 H. P. each, 110 lbs. steam.
One 54"x16" Horizontal Return Tubular, 70 H. P., 100 lbs. steam.
One 150 H. P. Manning Vertical, 125 lbs. steam.
Large stock of vertical types, all sizes.

ENGINES

30"x48" Watts-Campbell Corliss.
28"x48" Reynolds Double.
28"x48" Corliss.
24"x48" Cooper Tandem Compound.
22"x42" Greene.
20"x42" Buckeye.
20"x42" Greene.
16"x42" Allis.
14"x36" Russell.
12"x22" Greene.
Large stock of smaller sizes; also Automatic and Plain Slide-Valve, Vertical and Horizontal.

HOISTING ENGINES

11"x14" Flory, D. C. S. D.
10"x10" D. C. S. D. link motion.
8½"x12" Webster, Camp & Lane, D. C. S. D.
7"x10" Lidgerwood, D. C. S. D., 40"x2" boiler.
7"x8" Copeland & Bacon, D. C. S. D.
6½"x10" Davis, S. D. S. D.
6½"x10" Mundy, D. C. S. D.

WESTINGHOUSE ENGINES

One 13"-22"x12" Westinghouse Compound, 125-200 H. P.
One 12"-20"x12" Westinghouse Compound, 100-160 H. P.
One 11"-19"x11" Westinghouse Compound, 80-130 H. P.
Two 10"-18"x10" Westinghouse Compound, 65-100 H. P.
Large stock of Junior and Standard types.

PUMPS, GAS AND GASOLINE ENGINES, AIR COMPRESSORS, HEATERS, STONE CRUSHERS AND GENERAL EQUIPMENT.

PLANERS

34"x27"x7" Mattawan. 25"x25"x6" Harrington.
28"x26"x7" Wheeler. 28"x26"x6" Harrington.
30"x30"x8" Pease. 27"x27"x5" New Haven.

LATHES

48"x30" Triple Geared Lathe, raising blocks to 50".
36"x14" Screw Cutting Lathe.
36"x16" Triple Geared.
24"x10" Fitchburg.
22"x18" Harrington.
20"x10" Rahn-Carpenter.
20"x10" Rahn-Carpenter Gap Lathe.
20"x10" Harrington, taper attachment.
18"x10" Fitchburg.
18"x8" Bradford.
16"x8" Rahn-Carpenter.
16"x6" Flather.
16"x6" Porter.
16"x6" Prentice.
15"x8" Carroll-Jameson Lathe.
15"x8" Carroll-Jameson Lathe.
15"x8" Carroll-Jameson Quick Change Gear Lathe.
15"x8" Carroll-Jameson Plain Lathe.
14"x8" American, with gap.
14"x6" Prentice.
13"x6" Monarch Lathe.
9" South Bend Foot Power Lathe.

MILLING MACHINES

No. 2 A Owen Full Universal, with vertical spindle attachment.
No. 2 Cincinnati Universal Milling Machine, with vertical attachment.
Two No. 2 Van Norman Duplex Milling Machines.
No. 2½ Pratt & Whitney Horizontal Miller, table 11"x5".
About 20 Lincoln Type Milling Machines.

SHAPERS

26" Gould & Eberhardt.
20"x30" Pedrick & Ayer, open side.
20" Steptoe. 16" Steptoe. 16" American.
16" Cincinnati. 14" Steptoe.

PRESSES

PG-5 Ferracute Press.
No. 2 and 2½ Phila. Presses.

DRILLS

48" Gang Radial. 20" Plain.
42" Hilles & Jones. 30" Morris Radial.
36" Morris Radial. 32" Hamilton. 28" Barnes.

MISCELLANEOUS

Mitts & Merrill Keyseater.
100-lb. Little Giant Hammer.
25-lb. Little Giant Hammer.
50-lb. Little Giant Trip Hammer.
1½" Wells Bros. Bolt Cutter.
36"x12" Slab Miller.
Two No. 5 Springfield Oscillating Surface Grinders.
Two No. 14 Garvin Turret Lathes.
800-lb. Cement-Miles Single Frame Steam Hammer.
20" Esplan Lucas Cold Saw.
2" Wells Bros. Bolt Cutter.
4" Oster Pipe Machine.
4" Jarecki Pipe Machine.

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Air Compressors in First-Class Condition FOR SALE

1 Laidlaw-Dunn-Gordon Two-stage, Class II, 2300 cu. ft. \$3000.00
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12x12 New York Safety.
14x18 Erie Engine.
4x6 High Speed Ver. Engine.
No. 3 Pressure Blower.

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100 H. P. 16x18 Horizontal Center Crank Slide Valve Engine. Used Six months. Price \$350.00.

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Consisting of
1 100 H. P. Fairbanks-Morse Suction Gas Producer.
1 Blower.
1 Coal Elevator.
1 100 H. P. Fairbanks-Morse Double-Cylinder Gas Engine.
1 Circulating Water Pump, capacity 8000 gal.
1 Altitude Gauge.
1 Air Compressor and 5 H. P. Gasoline Engine.
2 Air Tanks, capacity 100 gal. each.
1 Oil Gauge.
1 Oil Filter.
1 Crocker-Wheeler Electric Generator, 65 H. P., D. C., 110-volt.
1 Switchboard.
The purchase price of this plant was \$7064.50. It was used from January 1, 1910, to July 1, 1911.
It is in perfect condition and can be purchased for \$5500.

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1 30-ton Little Giant Special High Crane Traction Steam Shovel. 1 26-ton Little Giant Traction Steam Shovel. 1 No. 6 Thew Traction Steam Shovel. 1 No. 1 Thew Traction Steam Shovel. 2 10x16" Porter 36" S. T. Locomotives. 2 10x16" Baldwin 36" S. T. Locomotives. 1 15x25" Baldwin 6-driver S. G. S. T. Locomotive. 2 10-ton 3-wheel New York Steam Rollers. 1 3-ton Tandem Universal Puddle Roller. 1 2½-ton Tandem Iroquois Asphalt Roller. 7 Steel Guy Derricks, 70' masts. 2 2-yd. Hayward Orangepeel Buckets. 1 2-yd. Hayward Clamshell Bucket. 1 1½-yd. Hayward Clamshell Bucket. 5 Lambert D. D. Boom Swing Electric Hoists, 40 and 60 H. P., D. C., 220 volts. 40 Hoisting Engines, Lidgerwood, Mundy and Lambert, skeleton mounted, with and without boom swings, from 6 to 100 H. P. Air Compressors, Pumps, Boilers, Engines, Rock Crushers, etc. Get our price on new derricks before purchasing.
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1 18x36 Bates.
1 16x42 Allis.
1 16x42 Brown.
1 18x42 Lane & Bodley.
1 20x48 Wetherill.
1 22x48 Hamilton.
1 22x48 Allis.
1 24x42 Atlas.
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Automatic Engines of all sizes.
1 40-ton Corliss Engine Type De La Vergne Ice Machine.
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1 lot Brewery Tanks.
Woodworking Machinery of all kinds.
Belting, Shafting, Pulleys and Hangers.

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26x36 Erie City, 4-valve.
22x24 Erie Ball.
20x48 Harris Corliss.
20x24 Harrisburg.
18x42 Wetherill Corliss.
18x27 Erie City, 4-valve.
18x24 Ide Side-Crank.
18x18 Armstrong & Simms.
18x12 Allis Corliss.
16x36 Allis Corliss.
16x18 Ames C. C.
14x36 Hamilton Corliss.
14½x16 Buckeye Side Crank.
13x12 Atlas, 4-valve.
7x10 Harrisburg C. C.

ELECTRICAL

150 K. W. Wghse, S. Ph., 60 cy., 600 R. P. M.
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75 K. W. G. E. 125-volt dir. con. Balt-Wood Engine.
60 K. W. G. E. type "AS", 60 cy., S. Ph., alt.
17½ K. W. Wghse, 125-v. Dynamo.
6½ K. W. Crocker-Wheeler 125-v. Dynamo.

SPECIAL, \$700 EACH

Two 350 H. P. Abendroth & Root Water-Tube Boilers, 150 lbs. steam pressure, complete, ready for service, all nicely cleaned and painted. Must move immediately, and to save double handling, freight, etc., make price as quoted above.

Also have two 20 H. P. Nash 2-cylinder Vertical Gasoline Engines, two months' service, just like new. \$450.00 each.

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8x10 Erie City C. C. Automatic.
8x12 Erie City Automatic.
8x12 Skinner C. C. Automatic.
9x10 Ames Automatic.
9x12 New York Safety C. C.
12x12 New York Safety C. C.
10x10 Watertown C. C. Automatic.
10x14 Ide Automatic.
12x14 Atlas Automatic.
13x18 Erie City L. H. 4-valve.
13x21 Buckeye Automatic.
14½x15 Armstrong & Sims C. C.
14x20 Atlas R. H. Automatic.
16x16 Rice R. H. Automatic.
17x21 Russell L. H. 4-valve.
18x30 Vilter Throttling Governor.
Write for Prices.

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Rebuilt Engines and Boilers

Engines—Corliss.—18x42 Lane & Bodley, 18x36 Ohio Heavy Duty, 16x42 Allis, 12x30 Lane & Bodley.
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Engines—Throttling.—18x24 Atlas, 14x18 Sinker-Davis, 14x14 Lewis Vertical, 12x16 Reed, 12x14 Brownell, 10x16 Bass, 10x12 Atlas, 9x14 Lane & Bodley, 8x10 Erie, 6x8 Industrial.
Boilers—Stationary.—72x18, 66x16 High-Pressure, 72x18 Standard, 72x16, 66x16, 60x14, 54x14, 48x14, 44x14, 42x12, 36x16, etc.
Boilers—Fire Box.—100, 80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 H. P., etc.
Boilers—Vertical.—50, 40, 30, 25, 20, 16, 12, 10, 8, 5 and 3 H. P., etc.
Heaters.—All sizes, Open and Closed.
Pumps.—All sizes, Single and Duplex.
Electrical.—30 K. W. Generator, direct connected to 8x10 Skinner Engine; 20 K. W. Generator, direct connected to 8x10 Economic Engine; 18 K. W. Belted Generator.
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All sizes, 1/8 inch to 24 inches

Furnished with new threads and couplings, suitable for all practical purposes; large stock constantly on hand, together with a general assortment of used contractors' machinery.

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POWER PLANT FOR SALE

A 325 H. P. Skinner Engine on sub-base with a Westinghouse D. C. Generator, 200 K. W. Six D. C. Motors, 20 to 50 H. P. Also Acme Automatic Screw Machines, Shapers, Gear Blocking Machines, Rivet Grinders.

Power plant and tools are all new, having been installed this year.

The power plant has had very little use and is laid to be the "last word," and must be seen to be appreciated.

Some of the machine tools and motors have had a few weeks' use, some no use. Everything is in first-class condition.

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One (1) Sturtevant Single Exhaust Fan with direct-connected Vertical Steam Engine, suction 36" dia., upward outlet 30" dia.
One (1) Clayton Air Compressor, 6"x10"x6", steam driven.
One (1) Hydraulic Press, plates 14" wide, 34" long, ram 12" diameter, 12" stroke, pump 3"x7" stroke.

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One (1) 2" Acme Bolt Cutter.
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Two (2) 26" Barnes B. G. P. F. S. H. Drills.
One (1) 22" Garvin S. H. Drill.
One (1) 20" Prentiss W. F. Drill.
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LATHES

One (1) 38" raised to 42"x24" New Haven, practically new.
One (1) 26"x13" Field triple geared, practically new.

One (1) 24"x12" Garvin 1 1/4" H. S.
Three (3) 25"x12" Davis H. S.
Two (2) 22"x12" Schumacher & Boye.
One (1) 22"x12" Dietz & Gang.
Two (2) 20"x11" Wright.
One (1) 20"x11" New Haven.
One (1) 18"x8" Hendey T. A.
One (1) 16"x8" Harrington.

SHAPERS

Two (2) 25" Juengst.
One (1) 20" Cincinnati.
Two (2) 15" Smith & Mills.

MISCELLANEOUS

One (1) 36" Bickford Radial Drill.
30" Bullard Turret Head Boring Mill.
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Three (3) Bement Keyseaters.
One (1) 48" Bement Car Wheel Boring Mill with Crane.
One (1) 1 1/4" Mitts & Merrill Keyseater.
One (1) 14" Newark Slotter.
One (1) 40"x8" Newark Binse Horiz. Boring Mill.

Six (6) Sellers and Niles Axle Lathes.
One (1) No. 3 Long & Alstatter Punch and Shear.

Two (2) 20" Higley Cut-off Saws.
Chaser Grinder.
Two (2) 500-lbs. Merrill Board Drop Hammers.

One (1) 500-lbs. Bement Steam Hammer.
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Coulter & McKenzie Spring Tapering Machines.

Large number of Spring Benders, Spring Eye Machines and Banding Machines.
One (1) set 5' Boiler Rolls, 3/4" capacity.
43" Boiler Rolls, hand driven.
Merrill Trimming Press.

Two (2) 25" gap Allen Pneumatic Riveters.
Grinders, Saws, Emery Wheels, Anvils, Flat-ters, etc., etc.

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1 No. 4 Austin Crusher.
6 Sand Blast Machines.
1 36" gauge Electric Locomotive.
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Light Revolving Shovels

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The Marion Model 28

Operated entirely by one man. Swinging in complete circles in both directions, it will dig and deliver material at any point within its radius. It will work safely and successfully on a 15 to 20% grade, and handle at a splendid profit excavations having cuts as shallow as 10 in. in depth. Its dipper capacity is 5/8 cubic yards.

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2 Little Giant Traction Shovels.
4 10"x16" 63 1/2" gauge Locomotives (will change gauge to suit).
2 9x14 36" gauge Locomotives.
1 7x12 36" gauge Locomotive.
1 No. 5 Champion Crusher Plant.
1 10-ton 4-wheel Locomotive Crane.
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Hoisting Engines, Derricks, Boilers, Pumps.
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Three wheel type, condition guaranteed. Address

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One 45 H. P. 9x10-inch cylinder Simple Traction Engine, complete. Has been used less than three months. Address

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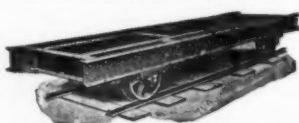
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Twenty-five horse-power, cross-compound, in first-class condition. Reason for selling, soil is entirely too soft in this section of the country; absolutely no fault of the engine.

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Complete Industrial Railway Equipment

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FOR SALE

Two three-drum tandem Lidgerwood Hoisting Engines, size 14x18, D. C., reverse link motion and friction drums, equally as good as new.

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FOR SALE—One industrial 8-wheel standard-gauge Locomotive Crane, 10-ton capacity, equally as good as new. Crane equipped for clamshell bucket, self-propelling, 50' steel boom
HENRY A. HITNER'S SONS COMPANY,
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Locomotives of all types and weights, freight cars of every description, 40,000, 50,000 and 60,000 lbs., some lighter capacity, some serviceable at practically scrap figures. Tank cars and steam shovels. Give us your requirements.

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One 10x10 cylinder Geared Climax Locomotive, 25 tons; one 17x24 cylinder Baldwin, passenger type, 35 tons; one 9x16 cylinder Vulcan, Forney type, 15 tons; one 14x22 cylinder Baldwin, 35 tons; one 12x16 cylinder Baldwin, 42-inch gauge, 25 tons; one 7x12 cylinder Porter, 36-inch gauge, 8 tons, saddle-tank; one 9x16 cylinder Baldwin, 42-inch gauge, 14 tons; one 9x16 cylinder Vulcan, 36-inch gauge, 6-wheel, 17 tons, saddle-tank. Several skidding and loading machines.

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Also the following—87 Ellison 4-yard dump cars, 36 gauge; 75 tons relay rails, 45 and 60 pounds 1 Mundy 7 by 10 D. C. and D. D. hoisting engine. Cheap to quick buyer. Address

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Special Track Work of Every
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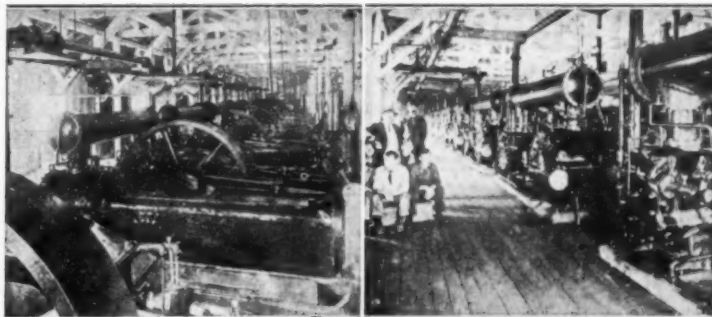
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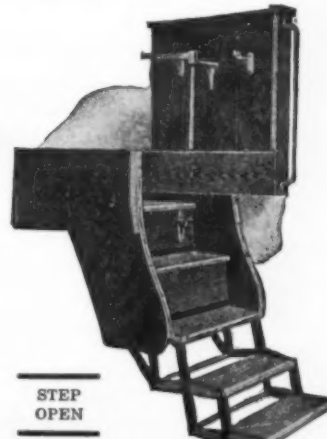
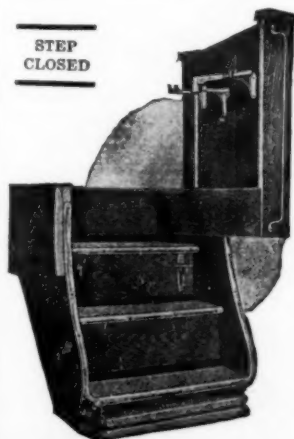
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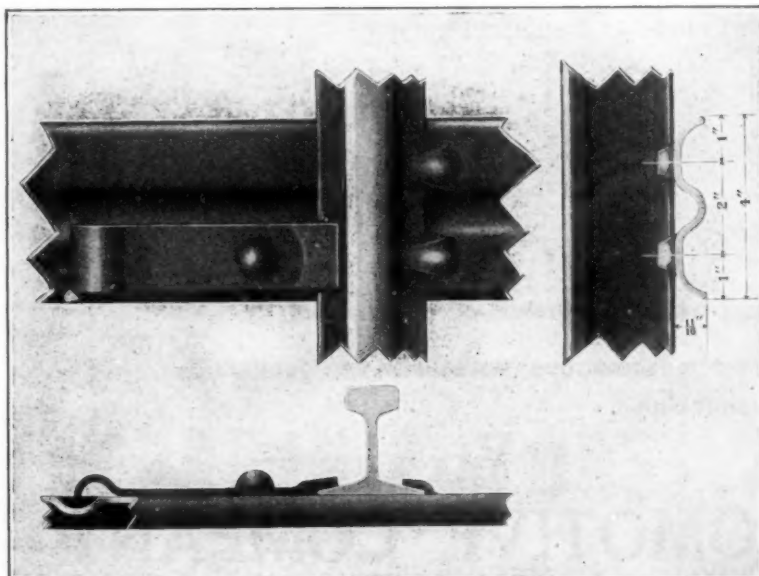
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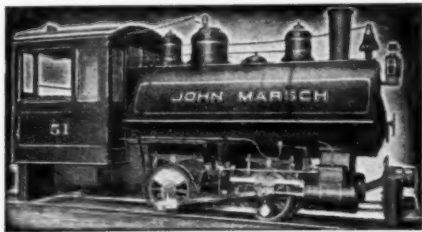
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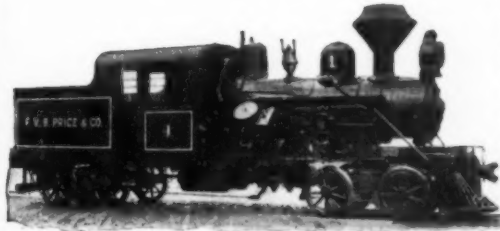
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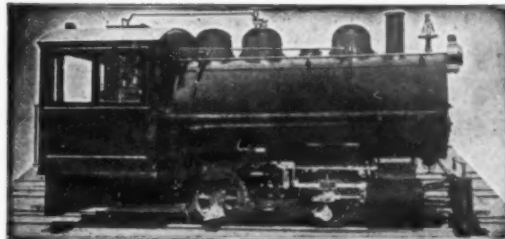
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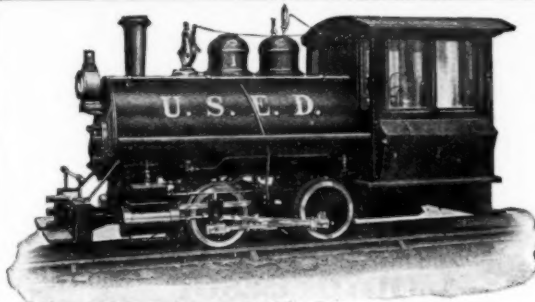
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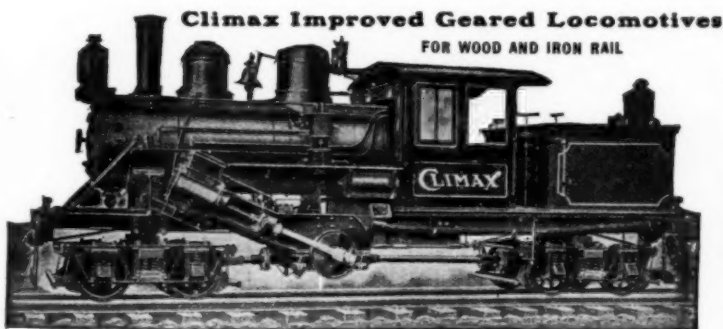
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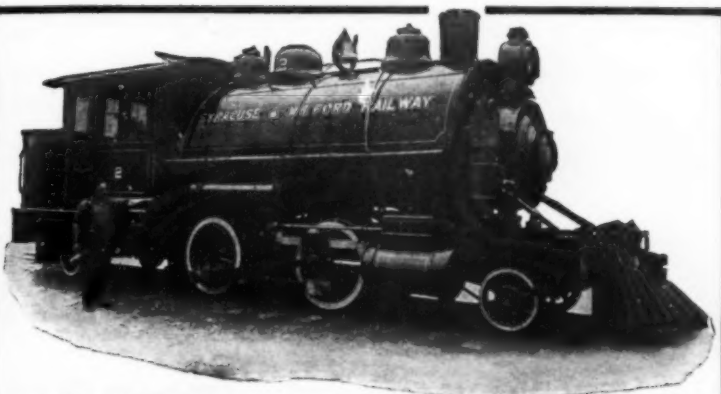
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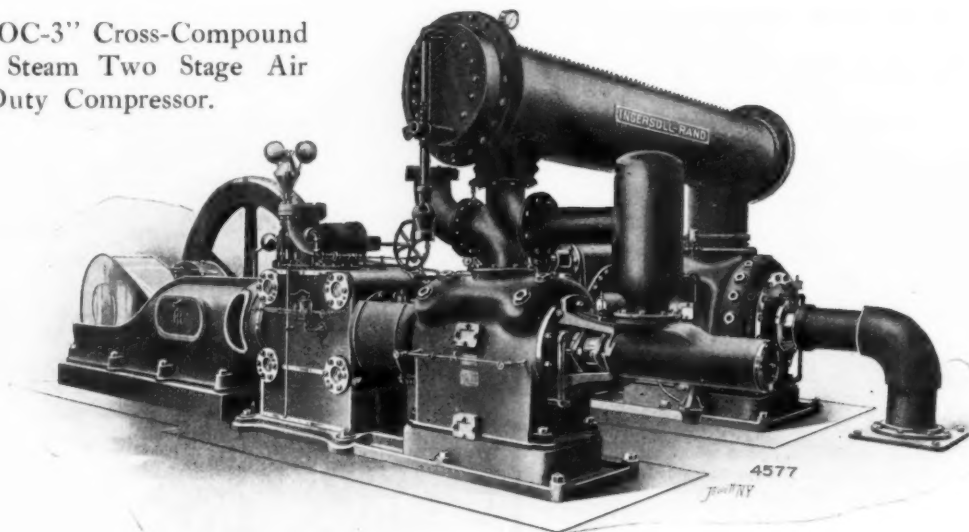
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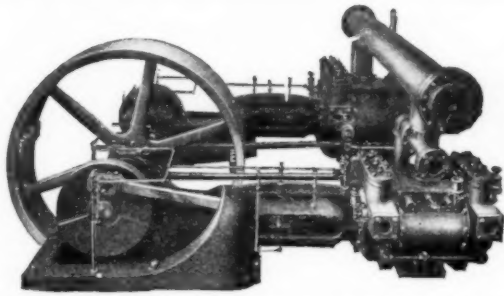
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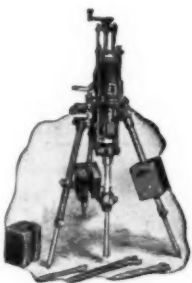
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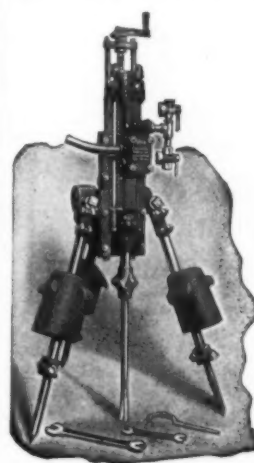
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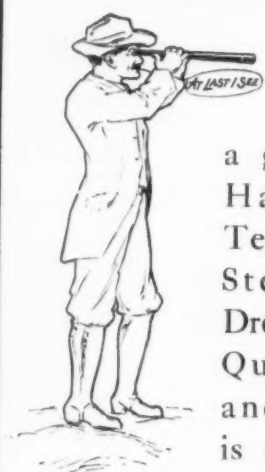
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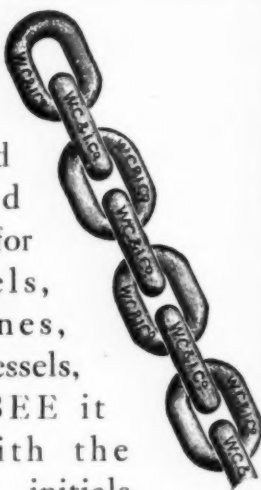
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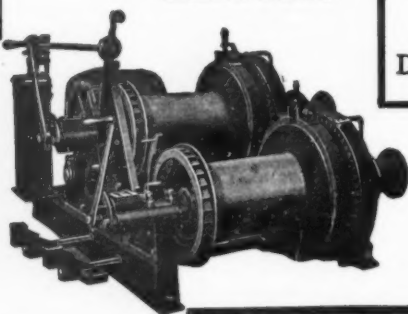
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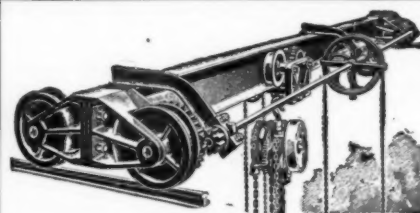
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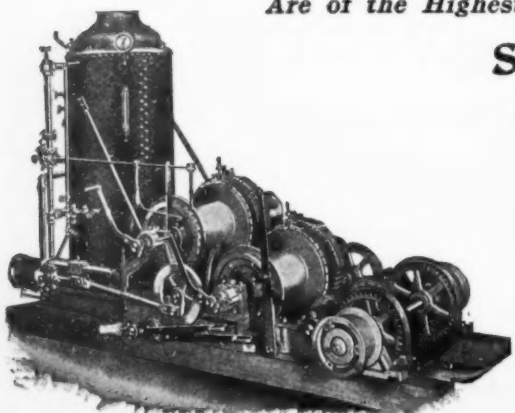
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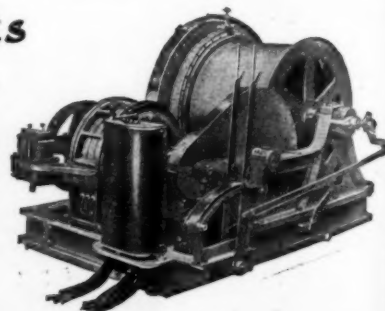
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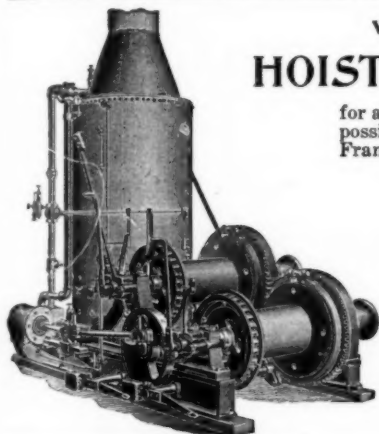


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FOR ALL PURPOSES

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STEAM AND ELECTRIC

For all kinds of Hoisting and Haulage Work

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Up-to-date Derrick Engine

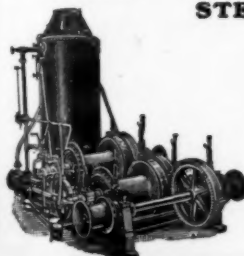
FLORY HOISTING ENGINES

STEAM AND ELECTRIC

For Contractors, Bridge Building,
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Hoisting Duty

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EVERY JOLT AND JAR

OF A HEAVILY LOADED DERRICK PRODUCES THOUSANDS
OF POUNDS OF STRESS ON CERTAIN PARTS



"AMERICAN" DERRICKS

ARE SAFE
AND STRONG

They are designed
by skillful engineers
and built of ma-
terial that for 28
years has stood the
severest shocks and
strains.

WE BUILD DERRICKS OF EVERY DESCRIPTION
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Clyde Hoisting Engines AND Derricks

ARE BUILT FOR
SEVERE DUTY and BEST RESULTS

IN
GENERAL
CONTRACTING
PILE DRIVING
DREDGING AND
EXCAVATING

Descriptive Catalog on Request

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DULUTH, MINN.



Chicago, Ill., 318-19 Fisher
Building.

New York City, 30 Church
Street.

New Orleans, 431 Carondelet
Street.

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Building.

SOME TESTIMONY AS TO DURABILITY

The Large Hayward Clam Shell Bucket, shown in the accompanying illustration (A 611), rehandled crushed stone and sand continually for three years, and also all other material used in the construction of the entire Hudson and Manhattan Tunnel System, under the Hudson River at New York City. It is still in use on other work.

This is a splendid testimony to the durability of

Hayward Buckets

but it is nothing new. Every other Hayward Bucket possesses just such exemplified durability. In other words, they not only work better, but work **better longer** than any bucket on the market.

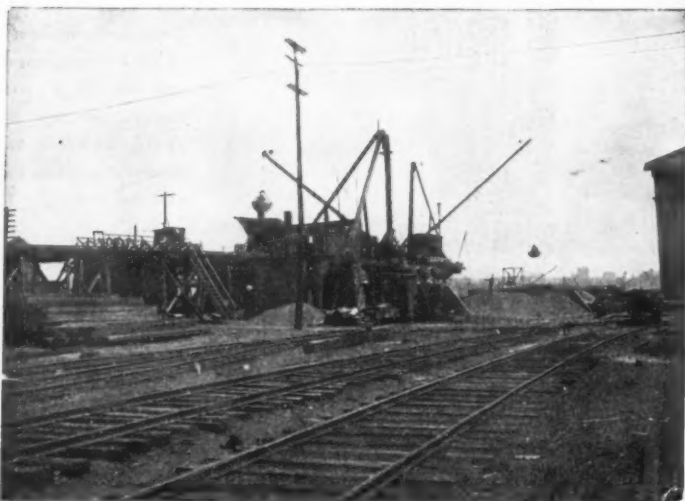


Illustration No. A 611

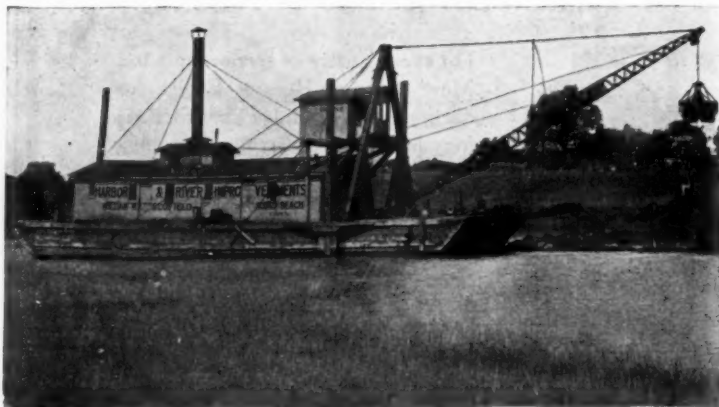


Illustration No. A 873

AS FOR SPEED

The one cubic yard Clam Shell Bucket, shown in the above illustration (A 873), handles 96 loads of sage bog in 55 minutes—and it is a most difficult material to handle. This bucket was used in river and harbor improvement work.

Rapidity of operation and greater length of life are identical with saving of money. Both are typical Hayward features.

THE HAYWARD COMPANY
50 CHURCH STREET NEW YORK

OUR CATALOG SHOULD BE IN YOUR FILES



Excavating Bucket

For Land Reclamation

And All Excavating and Dredging

Our Special Buckets

Solve the Problem

Clam Shell
Buckets
For All
Purposes

The G. H. Williams Co.
1502 Rockefeller Bldg. Cleveland, Ohio

Single
Rope
Buckets

MONIGHAN STEEL DRAG BUCKET EXCAVATORS

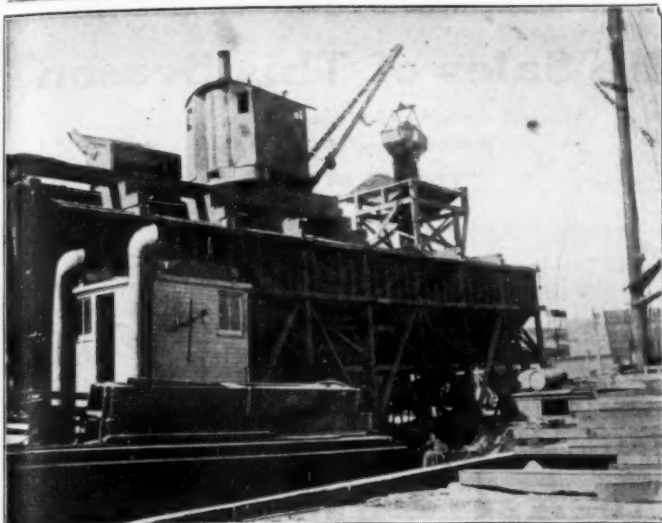
With booms from 40 to 100 feet in length

**Monighan Two Line
Drag Bucket**
1, 1 1-2, 2 and 2 1-2
Cu. Yard Capacity



No. 2 Excavator with 70 ft. boom and 2 yard bucket

Monighan Machine Co., 2016-2030 Carroll Avenue, Chicago



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Wherever materials are being handled under extraordinary conditions, you will most generally find a BROWNING LOCOMOTIVE CRANE successfully doing the work.

If you have a material handling or transfer proposition confronting you, write for our new 1912 catalogue; it will give you an idea of some of the difficult problems we have already solved.

The Browning Engineering Co., Cleveland, O.

We Manufacture Locomotive Cranes Only
OHIO LOCOMOTIVE CRANE CO.

BUCYRUS, OHIO

Southern Office—Paul-Gale-Gerwood Bldg., - - - Norfolk, Va.

We are SPRING SPECIALISTS. You should know us.

SPRINGS OF
Flat,
Round
and
Square
Wire

All Shapes and Styles
High Grade Machinery Springs



SPRINGS OF
Steel
Brass
Music Wire
Phosphor Bronze
Etc.

Raymond Mfg. Co., Ltd., Corry, Pa.

MACHINE TOOLS SHAW ELECTRIC TRAVELING CRANES SUPPLIES MACHINISTS, MILL and ENGINEERS

ENGINEERING SPECIALTIES OF ALL KINDS

MANUFACTURED BY

The Shaw Electric Crane Co.

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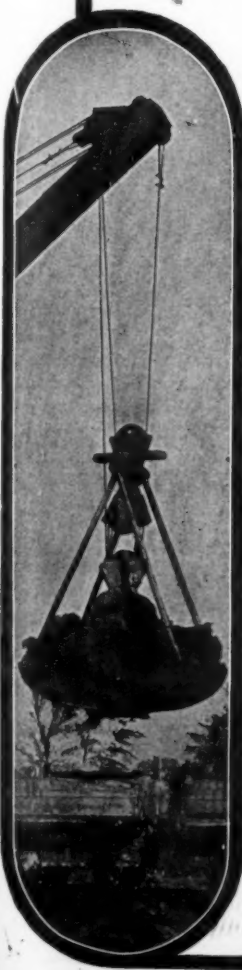
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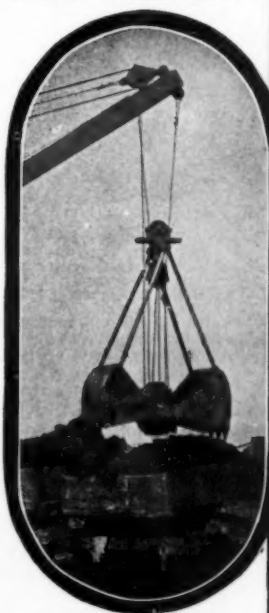
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A Bucket That Really Digs The Owen Bucket



has 100 per cent. greater digging power than any other bucket on the market today. The digging power is applied equally to both jaws.

Substantially constructed throughout and fully guaranteed. Try one on your work.



Successfully handles gravel and sand, crushed stone, clay and coal

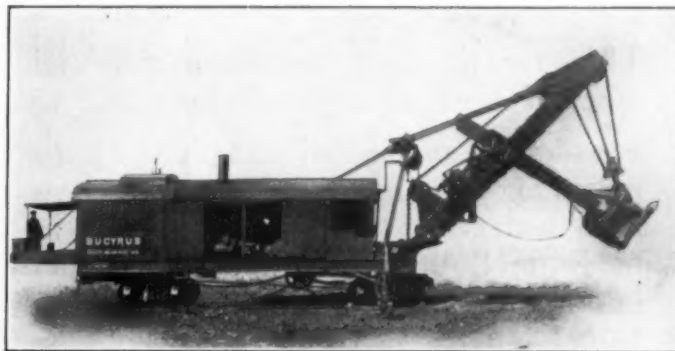
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The Owen Bucket Company
530 Rockefeller Bldg., CLEVELAND, OHIO

**WHEN THE DIGGING IS FAIR,
FEW SHOVELS WILL FAIL**

BUT YOU NEED A

BUCYRUS
IN ROCK



**BUCYRUS STEAM SHOVELS
ARE BUILT TO STAY**

WE ALSO BUILD

DRAG-LINE EXCAVATORS
RIVER, HARBOR AND DITCHING DREDGES
PLACER DREDGES

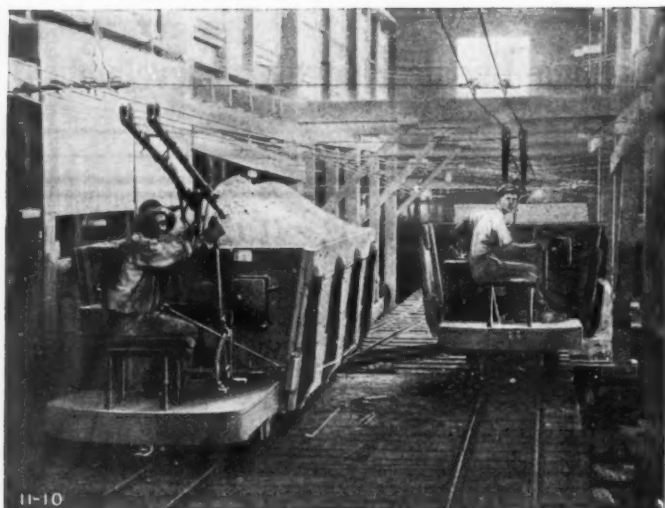
RAILWAY WRECKING CRANES
LOCO PILE DRIVERS
UNLOADING FLOWS

BUCYRUS COMPANY, P. O. BOX M.
So. Milwaukee, Wis.



SELF-DUMPING Trolley Cars

For Handling Fertilizing
Materials, Etc.



"Hunt" Self-Dumping Trolley Cars Handling Fertilizing Materials from Vessels to Storage. Miller Fertilizer Company, Baltimore, Md.

THESE CARS, while not working at their highest efficiency, are each handling, with one man, fifty tons per hour, over a distance, approximately, of five hundred feet, and this capacity is easily doubled when the cars are used under less severe conditions. The track over which they are run includes several seven per cent. gradients and twelve-foot radius curves. Power is obtained from an overhead trolley wire, and the car is fitted with hand brakes and controller.

These cars are made of different sizes and types to meet varying conditions.

We design and install complete equipments for handling Fertilizing Materials from water front to storage. Write us today for Bulletin R-1, and for further information, or apply to our nearest branch office.

COAL HANDLING AND HOISTING MACHINERY, CONVEYORS, "INDUSTRIAL" RAILWAYS, ELECTRIC LOCOMOTIVES, ELECTRIC AND STEAM HOISTS, "STEVEDORE" MANILA ROPE.

C. W. HUNT COMPANY
45 Broadway, NEW YORK CITY

Chicago: 1616 Fisher Building. San Francisco: 865 Monadnock Building
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Works: West New Brighton, New York

The Sales of This Season

Will make another record breaking year for us.
Last year's sales were large, but this year's

"The Biggest Ever"

It is all because the



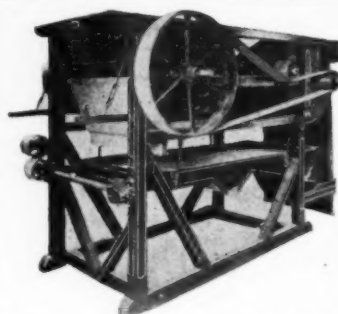
**Eagle
Dump
Wagon**

and Dump Box suit
the users.

Ask for our 1912 Catalogue. It's now ready.

THE EAGLE WAGON WORKS
Auburn, N. Y.

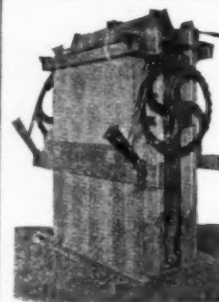
P. S.—It looks now as if the Banner Sales for any city from January to January would be taken by a Southern city. The Eagles suit everywhere.



Eureka Peanut Sheller

Simple in Design.
Durable in Construction.
Thorough in Action.
Various Capacities.

APPOMATTOX IRON WORKS & SUPPLY CO.
PETERSBURG, VA.

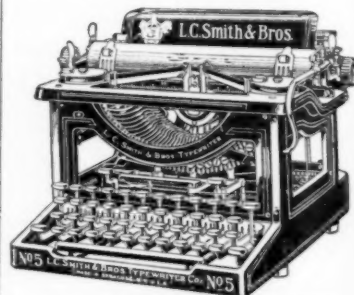


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BALING PRESSES
FOR
COTTON MILLS
PAPER DEALERS
RAG and
JUNK DEALERS

Manufactured
by

THE SINCLAIR-SCOTT CO., Baltimore, Md.

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L. C. SMITH & BROS. TYPEWRITER
(Ball-Bearing, Long-Wearing)

You owe it to yourself to inspect this NEW MODEL before purchasing a typewriter. It is the latest and best example of what a writing machine should be.

The MODEL FIVE includes every desirable practical device for the convenience of the operator.

It is compact and complete. Ball-bearings throughout make it easy running. More work with less effort.

Even though "hard to suit," this newest model cannot fail to impress you. For the work you want of a typewriter it is without an equal.

Send for our "Story of the Ball Bearings."

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No other system has proved so simple, so inexpensive to install and so satisfactory in operation as the TIME CHECK SYSTEM. Our pamphlet, "Time Checks and Their Use," is well worth the three minutes necessary for a reading.

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Manufacturer of all sorts of
**Stamped and Embossed
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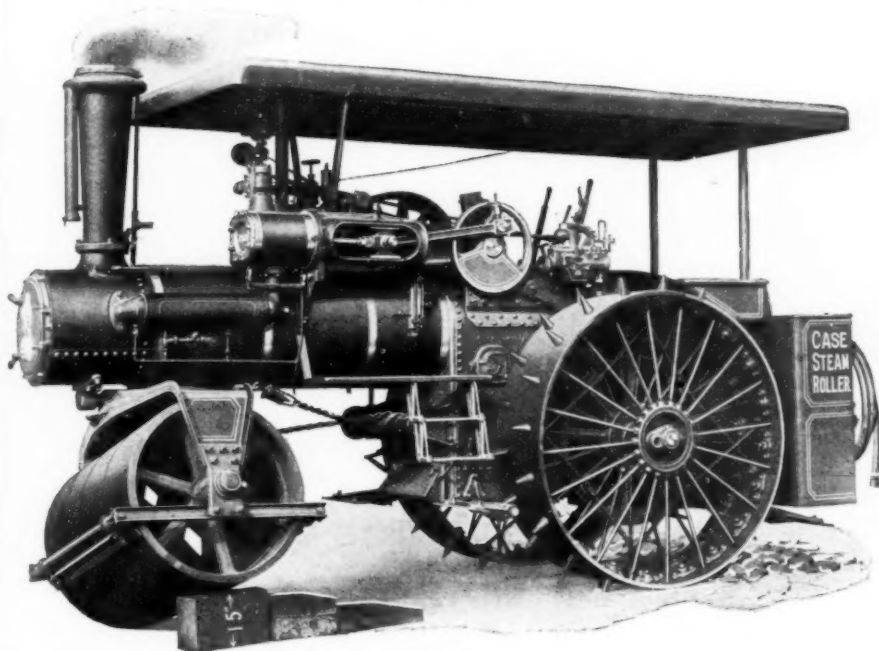
Hotel checks, key tags, door numbers and badges. Breast and hat badges for electric and steam road employees, police and fire departments, etc.

Complete Catalogue Free.

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It's a big factor in making the best roads. Stands constant, severe use and you can't overwork it. It has many improvements and is free from defects found in the general run of rollers. The Case guarantee insures perfect construction and lasting satisfaction.



Our 65 branches and 10,000 agents throughout the country are always ready to serve you.

Case Road Machinery includes practically every appliance used in building roads.

Write for catalogue "L."

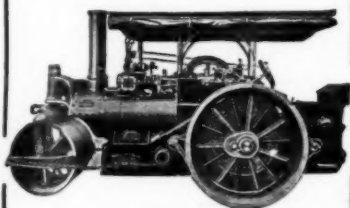
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Buffalo Pitts Rollers

BUILT FOR SERVICE

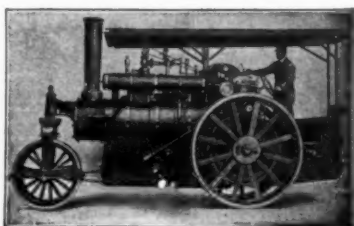


Made in all types and sizes for all purposes
4 to 20 tons

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THE KELLY-SPRINGFIELD ROAD ROLLER CO.

SPRINGFIELD OHIO

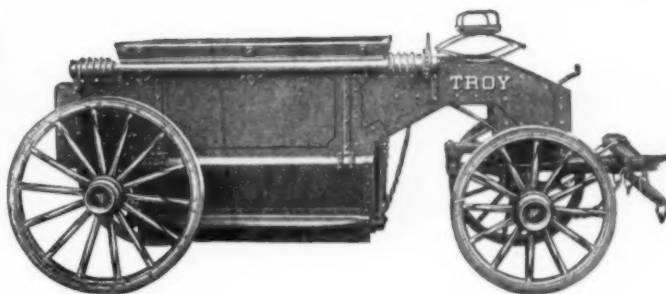


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ALL TYPES
ALL SIZES

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GET SATISFIED



Have you seen the new TROY?

See it once and you can't be satisfied with any other Dump Wagon.

Teamsters, horses, owners—all are friends of the TROY Special. Let us tell you why you need it, too.

GET CATALOG 2M AND THE PRICE

The Troy Wagon Works Co.

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Manufacturers of

HIGH GRADE PAVING BRICK

COPELAND-INGLIS SHALE BRICK CO. Office, 610 1st Nat. Bank Bldg. BIRMINGHAM, ALA.

The Ruggles-Coles Portable Heating Plant

For Modern Bituminous Pavements

Capacity—1200 to 1500 square yards of 2-inch surface per day

Experience has proven the economic advantages of surfacing and resurfacing streets and roadways with bituminous material.

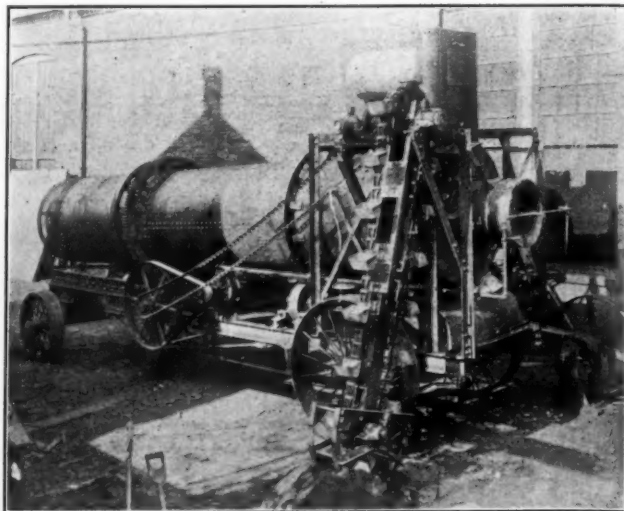
Satisfactory and permanent results require the mineral matter used to be first heated to the proper degree and then mixed with a rightly prepared bituminous material. The cardinal feature of this class of work is properly heating the mineral material, which constitutes 90 to 95 per cent. of the material used.

To do this work economically and perfectly we have designed the Ruggles-Coles Portable Heater, as shown herewith. It has been thoroughly tried and proven out under severe commercial conditions. It has never failed to give the desired result; it is extremely simple in operation, is not subject to breakdowns, and we can guarantee both the quantity and quality of its output. On the average, the work is done as cheaply as by the cold mixing process, and the results are far more permanent and satisfactory.

The great success of this machine results from having applied to it the experience of many years in building our standard stationary driers, which have been supplied to the United States Government and to many of the leading industrial companies. The portable machine embodies the same principles as the standard stationary driers.

It is easily moved along the line of work from day to day, and has a daily capacity of from 1200 to 1500 square yards of 2-inch surface.

Town and city officials, paving companies, road contractors, engineers and all others interested in building and maintaining the best and most economical streets and roadways will profit by knowing the actual work of this machinery, and we will be glad to furnish all the necessary information.



Ruggles-Coles Engineering Co.

50 Church Street, NEW YORK
McCormick Building, CHICAGO

Balfour Improved Dressed Granite

PAVING BLOCKS

THOROUGHLY
MODERN

ENDORSED BY
EXPERTS



Balfour Dressed Granite Blocks

SOME ADVANTAGES

Great Durability

High Compressive Strength—50,000 lbs. to the square inch.
Co-efficient of Wear—20.8.
Intimately Locked Crystals.

Reduced Labor Cost

Less Handling—pave either head up.
No Re-dressing—No Sorting—Less Filler—In Short
UNIFORMITY.

Reduced Maintenance

Great Durability, Close Joints, meaning more
GRANITE to the square yard
No Floating Up.

Buy your Paving Blocks like you buy other material—on merit. Balfour Blocks stand for Quality.

Balfour Granite is 65% stronger than any other Granite in America. Let us send you our booklet "GRANITE." A postcard brings it.
DO IT NOW.

The Harris Granite Quarries Company
SALISBURY, N. C.

GRAY AND PINK STOCK

CRUSHED STONE

American Ingot Iron CULVERTS

Are Efficient

Are Economical



Culverts of AMERICAN INGOT IRON are today extensively employed by the Government, the various State Highway Departments, and the leading Railways of the country—convincing evidence of their superiority in their class.

These facts notwithstanding, they are low enough in price to be used wherever economy is a factor to be considered.

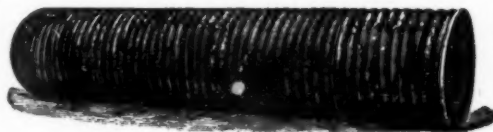
We shall be pleased to furnish information applicable to your requirements.



**North Carolina
Metal Culvert Co.**
GREENSBORO, N. C.



These Corrugated Metal Culverts



**STAND THE
STRAIN**

The heaviest loads do not affect them. Carefully made and thoroughly tested before shipped.

Made of "American Ingot" Iron, they cannot rust. They make a permanent installation. They cost less than wood and are safer than their imitators. Used by the biggest railroads and the best road engineers. Write for "Book of Tests."

KENTUCKY CULVERT MFG. CO.

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Manufacturers of

Sewer and R. R. Culvert Pipe

Fire Brick, Milled Clay Flue Pipe and Chimney Tops, Urns, &c.

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HIGH GRADE PAVING BRICK

Guaranteed to stand 18% standard test

THE CARLYLE PAVING BRICK CO.

PORTSMOUTH, OHIO.

O. K. HARRY CORRUGATED CULVERT PIPE

(STEEL OR IRON)

For better roads and lower maintenance cost. Serviceable, durable, non-corrosive and simple to install.

Manufacturers also of Corrugated Metal CISTERNS and Storage TANKS.

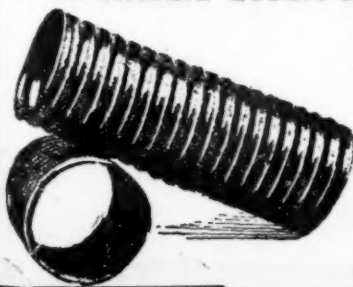
Our new and sanitary Cistern gives health to their users.

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O. K. HARRY STEEL CO.

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Factories—St. Louis and Dallas, Tex.



MORE "SAYS A" of a Different Nature

(Continued from Last Week.)

SAYS A Maryland City Engineer:

"In several instances I have seen your 'ACME' (NESTABLE) Culverts support a 10-ton roller with only .5 of a foot covering on it with no deflection."

SAYS A B. & O. Railway Engineer:

"A 15-ton road roller passed over the 'ACME' several times with only a foot of loose earth on it, and it stood the test."

SAYS A Texas Railway Assistant General Manager:

"The results of the use for a year of your 'ACME' Culverts under our road bed are so satisfactory that we shall make use of them in future work."

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"You have just received our second carload order for 'ACME' (NESTABLE) Culverts within a year's time," etc.

SAYS A Massachusetts Town Selectman:

"We put the Steam Road Roller over the 'ACME' (NESTABLE) as soon as it was set up, and it stands up all right."

SAYS A Railway Manager in Colorado:

"We have 'ACMES' installed under our road and they are standing the heavy traffic in an entirely satisfactory manner."

NOW, JUST ONE FAIR QUESTION: Whose opinions do you think merit the most consideration—such people as quoted the past two weeks, or our competitors' salesmen?

THE CANTON CULVERT CO.
SOLE MANUFACTURERS
CANTON, OHIO, U.S.A.

"Saved \$70 on Installation" of 48 ft. 60 in. diameter



2-36" Culverts under 25' fill
Brinson Railway.

American Ingot Iron Corrugated Culvert Pipe

The above was statement of a prominent Engineer M. of W. after figuring the work train cost.

WHY?

Light, easily handled.
Made in solid, continuous lengths as may be specified.
No assembling of short sections on the ground.

PERMANENCY

AMERICAN INGOT IRON is the only iron with a guaranteed analysis. It is 99.94% pure; the purest iron manufactured commercially. This is why it lasts and resists detrimental influences.

This culvert gives perfect service under the lightest and heaviest fills.

Write for Information.

THE DIXIE CULVERT & METAL CO.

ATLANTA, GA.

LITTLE ROCK, ARK.

Main Office—ATLANTA, GA.

American Ingot Iron Road Culverts, Tanks, Roofing and Siding.



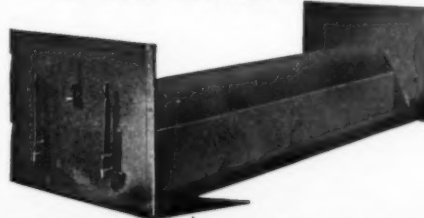
Look for the trade mark. It means durability. Don't accept the imitations. We have the proof that our culverts will carry the heaviest loads that travel and will last for years where others fail. Write for Pamphlet A. on AMERICAN INGOT IRON and B. on culverts and tanks.

The Tennessee Metal Culvert Co., Nashville, Tennessee.

SAVE 25 PER CENT IN COST OF CONSTRUCTION

CULVERTS
CONDUITS
SEWERS

**Our Collapsible
Steel Forms
Will do it**



They are the lightest, strongest, easiest handled forms on the market. Not a single failure anywhere. Write for illustrated booklet and full particulars.

CONCRETE FORM & ENGINE CO., 57 Congress St. W., DETROIT, Mich.

The deadly Road Oil parallel

The "Usual" Road Oil

Lays the dust.

Requires a top finish of sand or screenings.

Costs dollars.

Requires a special sprinkling cart.

Makes a nasty, gummy surface that is frequently tracked into the house and well-nigh ruins everything where a footprint is made.

"Prime White" Road Oil

Lays the dust.

Does not require any top finish.

Costs one-sixth as much.

Is applied by any old sprinkling cart that is at hand.

Makes a clean, colorless surface that doesn't hurt a thing, no matter where it may be carried.

Furthermore, "Prime White" Road Oil may be applied in any season to any kind of a road.

To sum up, this Road Oil is most economical in first cost, in application, and in maintenance, and it does all that any road oil can do, besides which **it is positively clean.**

Write for a sample so you can see it. It will be sent by us free of charge. With it we will also send our latest publication,

"Road Bitumens: Their Scientific Use and History"
a 32-page book splendidly illustrated, of great interest.

PRIME WHITE ROAD OIL CO.

CINCINNATI, OHIO

STANDARD

Asphalt Road Oil Emulsifying Road Oil Macadam Asphalt Binder

Make good, permanent roadways, and keep them in good condition.
Give lasting relief from dust.

Suitable for use in all localities.



Treated with Standard Macadam Asphalt Binder "A".
View taken November, 1909.



Same highway, with no further treatment, December, 1910.
Note perfect condition.

The Standard Oil Company does not offer any single product as the best for making and maintaining every kind of road. It does manufacture a variety of products, the proper selection and use of which insure you satisfactory results. If you are uncertain what to use, write us.

Asphalt Road Oil In four grades, containing from 30% to 60% asphaltum. For use on well-made roads as they are. One application usually lasts a season.

Emulsifying Road Oil A lighter asphaltic oil, prepared to mix readily with water. Particularly serviceable as a dust preventive for parks, private estates, boulevards, etc. Requires frequent application where traffic is heavy.

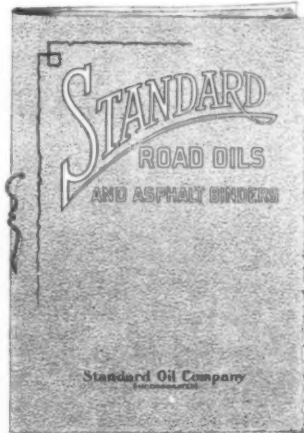
Macadam Asphalt Binder Almost solid asphaltum; used in constructing macadam and all other roads where asphaltic material is needed.

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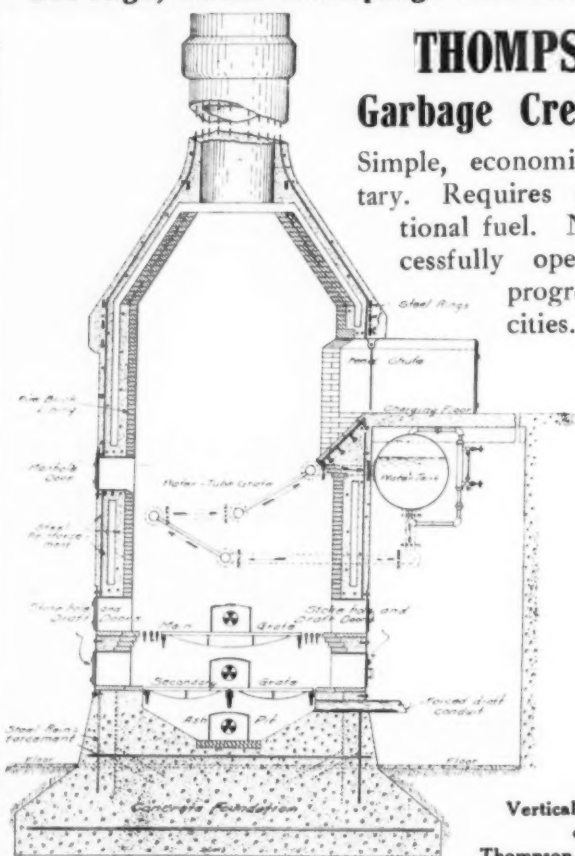
We will mail you free, upon request, our new Standard Road Oil book, 48 pages, profusely illustrated. It explains the particular uses for which the different oils are prepared and how they should be applied to give the best results.

The information it contains will be found invaluable to Supervisors, Road Commissioners, State, County and Municipal authorities, and to owners of private estates.

STANDARD OIL COMPANY
(INCORPORATED)
ROAD OIL DEPARTMENT



THE MODERN METHOD OF DISPOSING OF Garbage, Street Sweepings and All Refuse



THOMPSON Garbage Crematory

Simple, economical, sanitary. Requires no additional fuel. Now successfully operated in progressive cities.

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Vertical Section
of
Thompson Crematory

SPECIALTY ENGINEERING CO., HOUSTON, TEX.



The Bourbon Copper and Brass Works Company MANUFACTURERS OF FIRE HYDRANTS and STOP VALVES

Water Works and Fire Department
Supplies and Extension Valve Boxes
Long Distance Phone, Canal 3297. 616 and 620 E. Front St., Cincinnati, O.



COLUMBIAN IRON WORKS CHATTANOOGA, TENN.

MANUFACTURERS OF

Fire Hydrants, Valves, Valve Boxes,
Sluice Gates, Meter Boxes and
Water Works Supplies

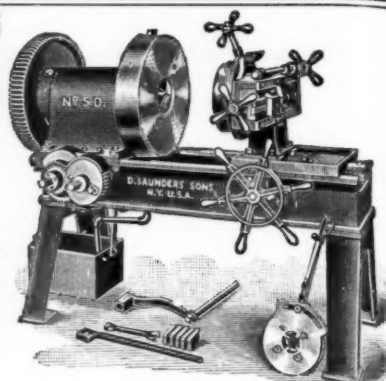
Also Municipal and Building Castings

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PIPE CUTTING and THREADING MACHINES

All Sizes for Pipe Mills
Gas and Steam Fitters

This cut shows our No. 5 D Improved Power and Hand Pipe Threading and Cutting Machine. Capacity 1 to 6 inches. Gripping chuck can be Universal or Independent. Let us send literature which tells all about it.



D. SAUNDERS' SONS, Inc. YONKERS, N. Y.

IF YOU WANT FIRST-CLASS

SEWER PIPE

Send your inquiries to the
CANNELTON SEWER PIPE CO.

MADE OF FIRE CLAY
CANNELTON, INDIANA

CAST IRON PIPE FOR WATER AND GAS WORKS

McWANE PIPE WORKS

LYNCHBURG, VA.

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AMERICAN CAST IRON PIPE CO.

Manufacturers of

CAST IRON PIPE AND FITTINGS.

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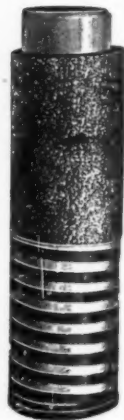
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ENGINEERS AND CONTRACTORS FOR

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Manufacturers of PHIPPS' HYDRAULIC PIPE



It Carries More Water For Its Diameter Than Any Iron Pipe

WYCKOFF WOOD PIPE is not impaired by the effects of electrolysis, acid fumes or corrosion.

It is light, strong and very durable.

Lengths, 6 ft. to 12 ft. long.

Size for size, it carries 14% more water than iron pipe.

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May we send Catalog giving fullest details.

A. WYCKOFF & SON CO.

Established 1855

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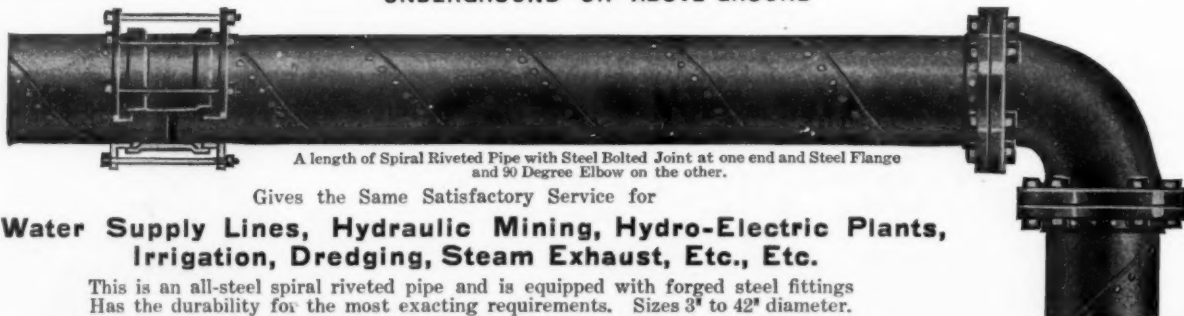
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UNDERGROUND OR ABOVE GROUND



A length of Spiral Riveted Pipe with Steel Bolted Joint at one end and Steel Flange and 90 Degree Elbow on the other.

Gives the Same Satisfactory Service for

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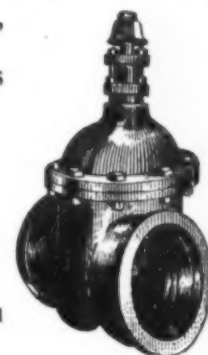
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Registered U. S. Pat. Office

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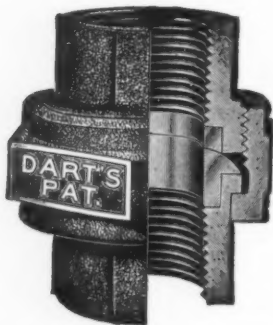
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Have Bronze to Bronze at the
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This construction is embodied in our
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Sheaves, Hooks, Shackles, Straps, Bushings,
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THE ELECTRO-CLOCK



LAST FOREVER FIREPROOF STEEL CASE

It never varies and is just the clock
for railroads, manufacturers and other
firms requiring absolutely accurate
time. Needs winding only once every
eighteen months. Let us tell you
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VAULTS

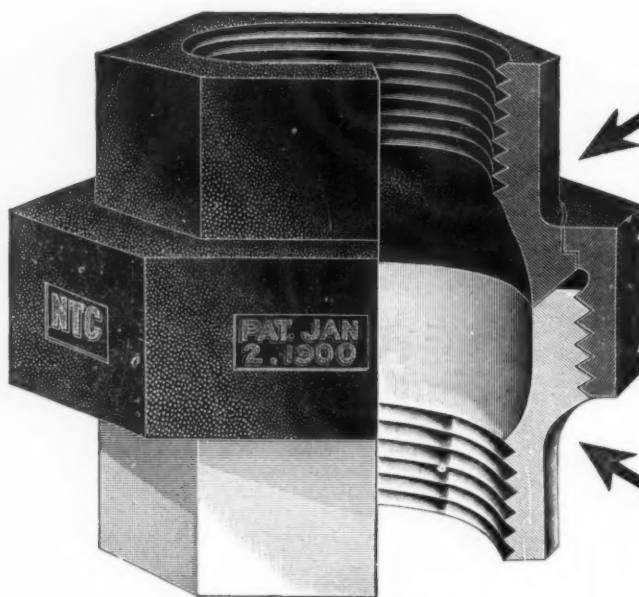


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"The Union With No Inserted Parts."

One Company uses
25,000
"Kewanee" Unions

Yes! 25,000 "KEWANEE" UNIONS in actual use in one plant!

Could there be a higher testimonial of satisfactory service?

This is only one instance of many where "Kewanee" Unions are used in large quantities—but quantity and quality always keep pace with each other.

One of our representatives recently called on the General Foreman of a large Eastern Company, who said:

"We have about 25,000 "Kewanee" Unions in use throughout our four plants, and if you want any testimonials just let me know."

The user of 25,000 "Kewanee" Unions does not need to offer any other testimonial than the fact that he has in actual use 25,000 "Kewanee" Unions.

The unique "Kewanee" Union advantages are briefly:

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Special

Order a few "Kewanee" Unions for trial. If your
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and Specialties are carried in stock in practically every
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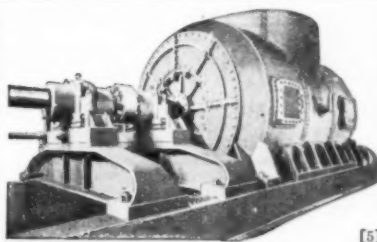
DON'T ACCEPT A SUBSTITUTE—Insist on the "KEWANEE"

Our new booklet, "The Whole Kewanee Family," tells all about
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SAMSON WATER TURBINE

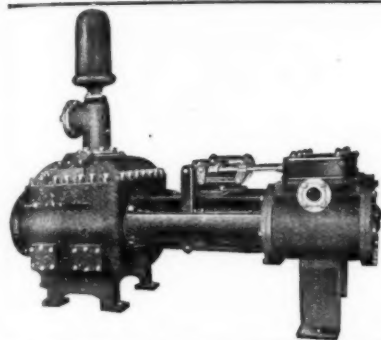
We show below a record of tests made in the official testing flume at Holyoke of a 35-inch SAMSON TURBINE, which was built from the same patterns as those we sell to our customers:

Gateage.	Head.	R. P. M.	Cu. ft. per sec.	H. P.	Efficiency.
Full.	15.29	194	102	143	81.08%
$\frac{7}{8}$	16.56	188	92	147	84.78%
$\frac{3}{4}$	17.33	178	84	138	83.88%
$\frac{1}{2}$	17.54	176	69	110	80.09%



[5]

JAMES LEFFEL & CO., 310 Lagonda Street, Springfield, Ohio, U. S. A.



BLAKESLEE
MFG.
CO.

PUMPS

27 DU QUOIN ST.
DU QUOIN,
ILL.

When you need a good pump,
don't guess—buy a GUARANTEED Blakeslee.

When we know your pump conditions we will prescribe the exact machine you need. Then we'll guarantee its performance and stand behind it absolutely.



Take off your Hat to the

Well Pumps, Power Pumps,
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With Glass Valve Seat
A Line Without an Equal
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MYERS

The Pump that **PUMPS** **HAY** **TOOLS** **BARNDOR HANGERS** **HAY RACK** **CLAMPS**

THE MYERS BULLDOZER POWER PUMP
Made in different sizes. Cylinders from 2 1/2 to 6 ins. Strokes from 5 to 20 inches.

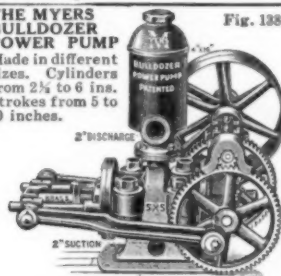
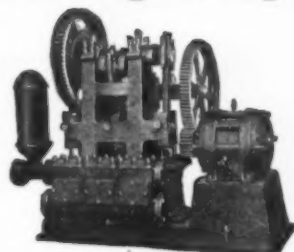


Fig. 1389

THE MYERS BULLDOZER WORKING HEADS, PUMPING JACKS, CYLINDERS, ETC.

Deming Pumps



Deming Triplex Power Pump direct connected to electric motor.

Ask for our general Catalogue of hand, wind-mill, power and spray pumps, or write us your specifications.

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SALEM OHIO
HAND AND POWER PUMPS

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For Artesian Water Wells; Oil, Gas and Mineral Test Wells; Blast Holes in Heavy Excavation. A complete line of Traction and Portable Machines, all depths to 2500 feet.



In writing for catalogue describe work.

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Built in All Sizes and Capacities **Water Power** Machinery to Suit Your Requirements
THE TRUMP COMPANY - - Springfield, Ohio

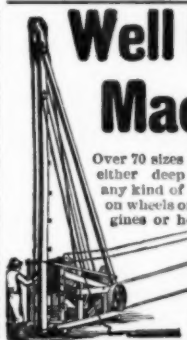


Established 1885
We are the WELL drilled and men. Write HUGHES SPECIALTY WELL DRILLING CO. 96 Ashley Ave. Charleston, S. C. Booklet

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Highest efficiency
Both CYLINDER and REGISTER gate
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Telephone 94

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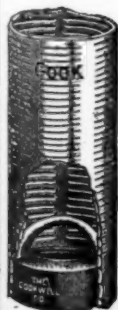
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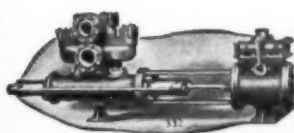


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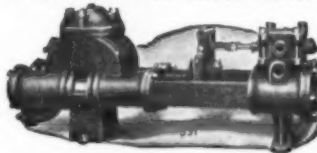
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BOOKLETS

303

SINGLE PUMPS



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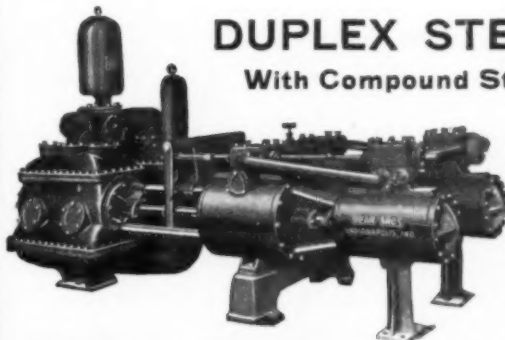
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DUPLEX PUMPS

CINCINNATI, O.

DUPLEX STEAM PUMP

With Compound Steam Cylinders



This pump delivers the full capacity of each piston at every stroke. The steam consumption is economical. The valve area is large.

DEAN BROS. STEAM PUMP WORKS.
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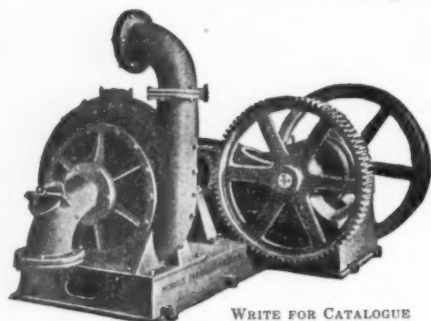
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Pumps for All Services

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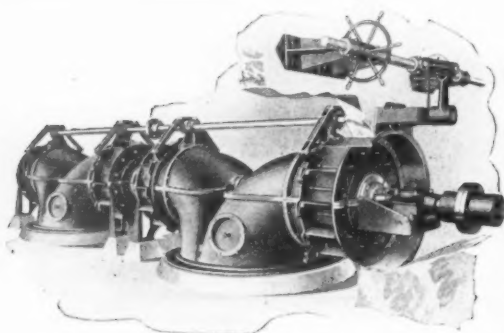
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Specially Designed
PUMPS
FOR
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Cotton Mills,
Etc.

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And Appurtenances Produce Better Results than
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tial construction of our machinery.

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CENTRIFUGAL PUMPS

ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining,
Circulating Water for Condensers, &c., &c.

The
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STERLING**on a
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on silver

It Cannot Be Better

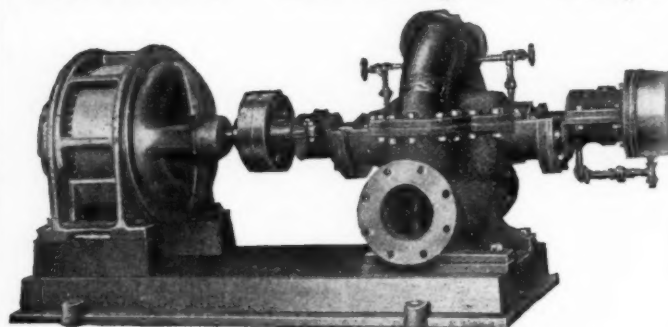
Be it steam or electric—centrifugal or recip-
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types are described in Bulletins W170-29 and
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W123.1

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RAISING THE MAINE
Has been Played by the
Jeanesville Centrifugal Pumps



Two of these pumps were used for unwatering the cofferdam sur-
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by a 100 H. P. motor, and one of 1000 gallons per minute capacity,
driven by a 50 H. P. motor.

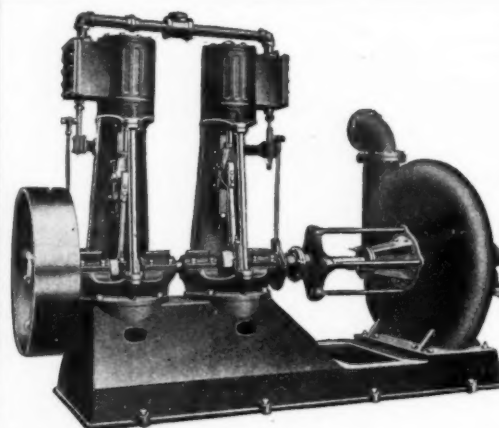
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Isn't it reasonable that pumps which were thought the best and
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In motor-driven combinations they are particularly adapted to con-
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J126.2



We recently shipped
three

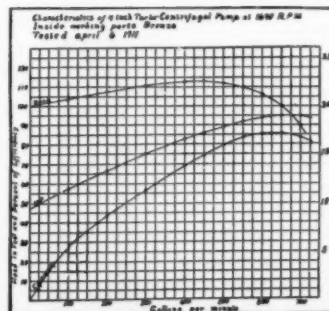
**SAND-GRAVEL
DREDGING
PUMPS**

like illustration to
one customer and
two to another one.

Is this not con-
vincing evidence of
their popularity?

ERIE PUMP & ENGINE WORKS, ERIE, PA.

**In This Test A Hayton 4"
Turbo-Centrifugal Pump
Showed an Efficiency of 85%**



This test shows that Hayton Turbo-
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with either centrifugal or plunger
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We make a point to submit actual
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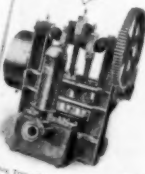
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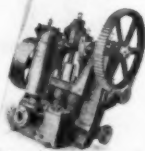
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Write us for copies of any in which you may be interested.

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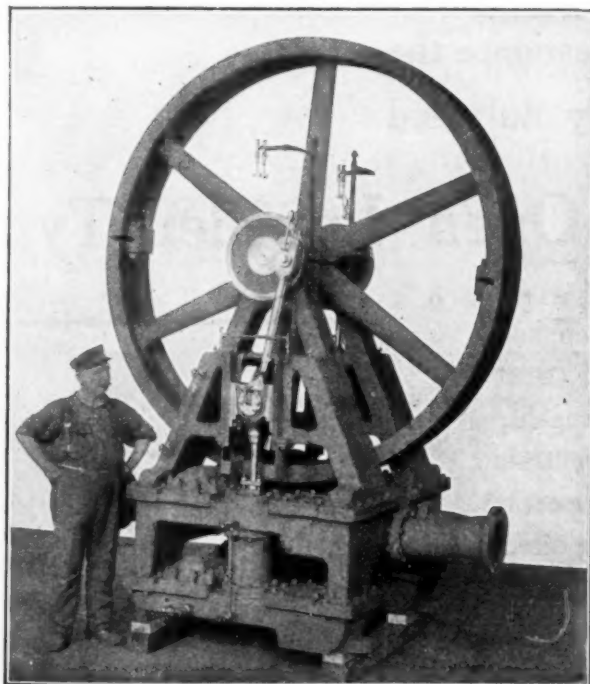
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Simple—Flexible—Efficient



No gearing. Belt driven from engine, line shaft, motor or water wheel.

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A PUMP FOR EVERY SERVICE

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WHY?

Because the only reliable test of a pump is its ability to continuously give satisfactory service.

The Deane customer receives the benefit of the evolution of the art backed by forty years of experience.

The Deane Steam Pump Co. builds the highest grade of Steam and Power Pumping Machinery, Single, Duplex and Triplex; Single Acting, Double Acting, and Center Packed; Vertical and Horizontal, adaptable for connection to any prime mover.

Deane has something which will interest you, if you are considering the purchase of any kind of pumps.

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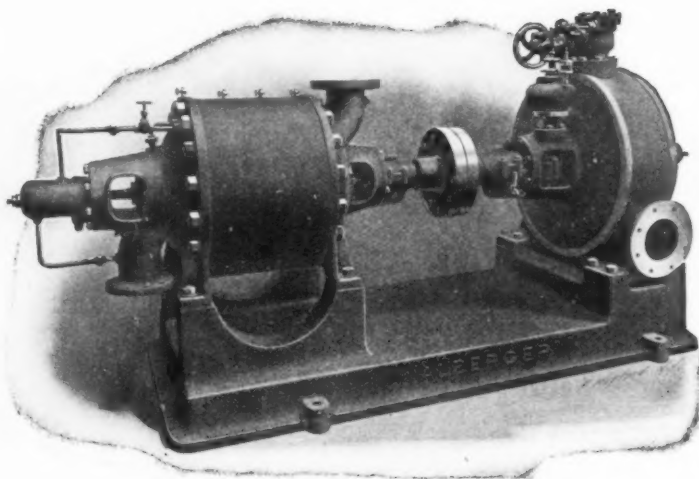
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We want you to investigate the
Holmes Hydraulically Balanced

Centrifugal Pump of the Open Impeller Type

Marked improvement over the enclosed-impeller pump and overcomes one of the impossibilities of the latter type, as it prevents rapid wear at the revolving joint, where the impeller enters the suction opening. Made after long, tedious tests and experiments. *The efficiency is high to start and remains high.* Reasonable in price, and adapted to belt-drive or direct connection to motor, engine or turbine. Made with either horizontal or vertical shaft, single or multi-stage, for any head or capacity.

We will answer your questions and quote promptly.

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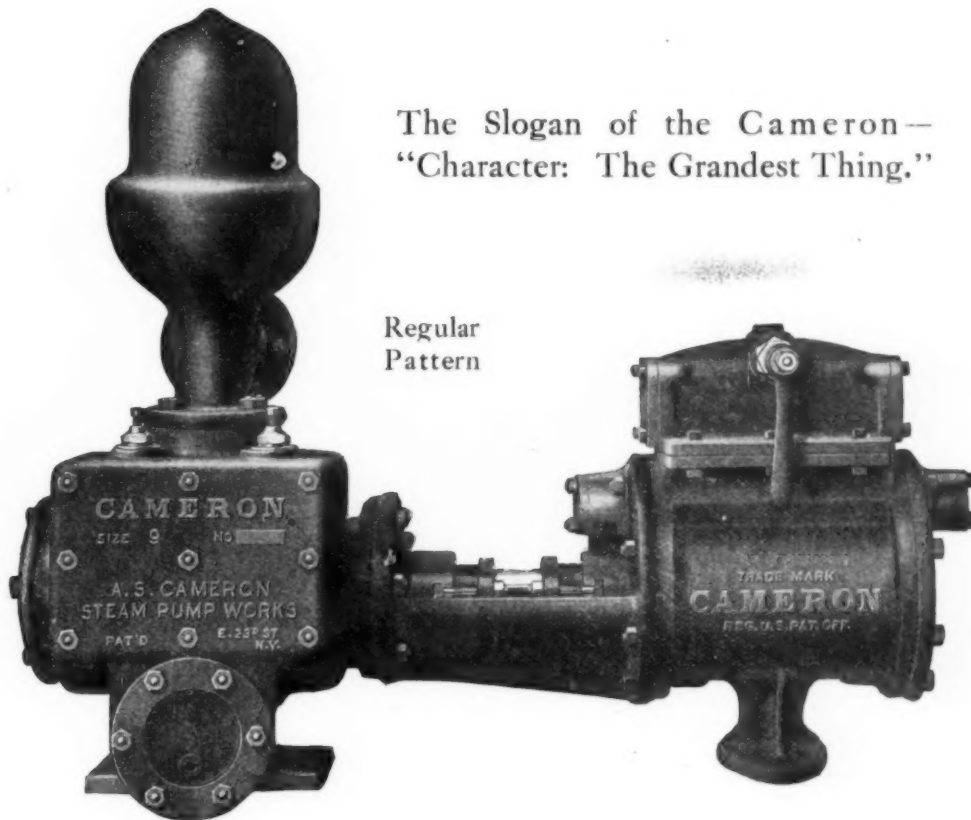
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CAMERON PUMPS

The Slogan of the Cameron—
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You Eliminate Experiments When You Buy A CAMERON PUMP

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IS WELL FINISHED WITH



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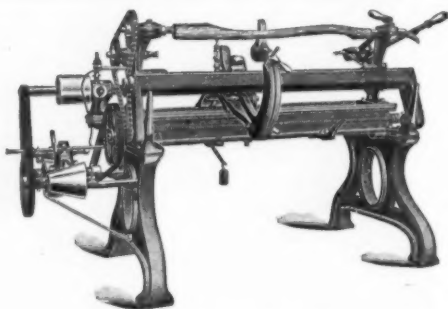
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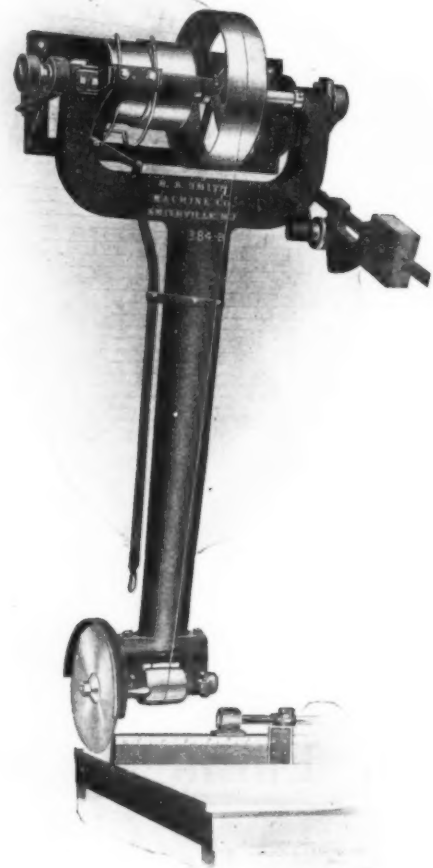
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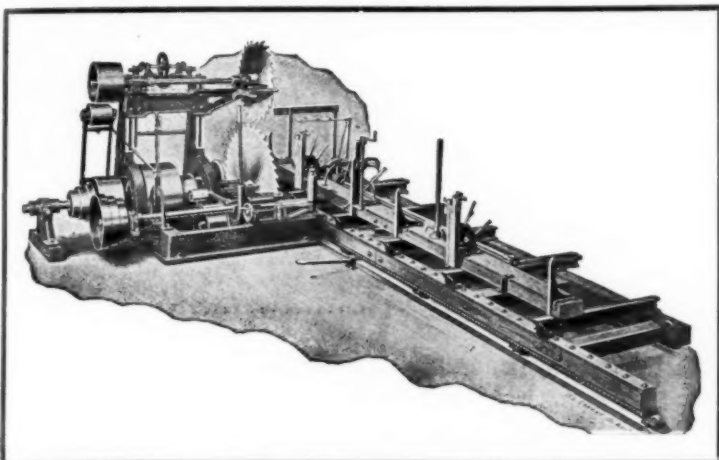
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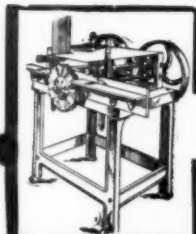
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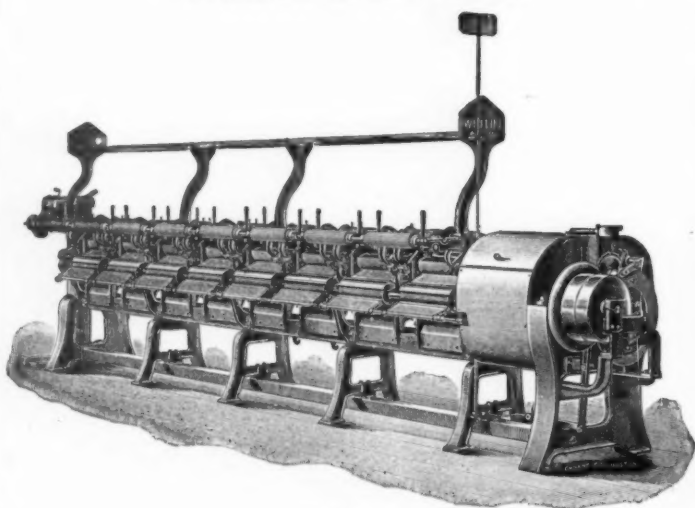
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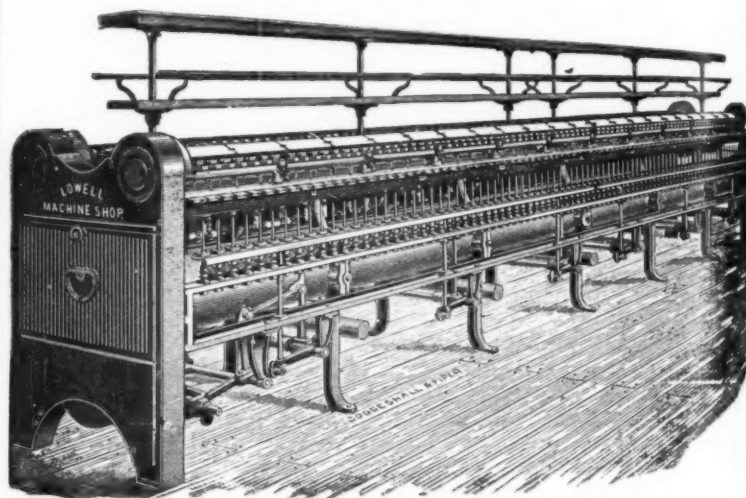
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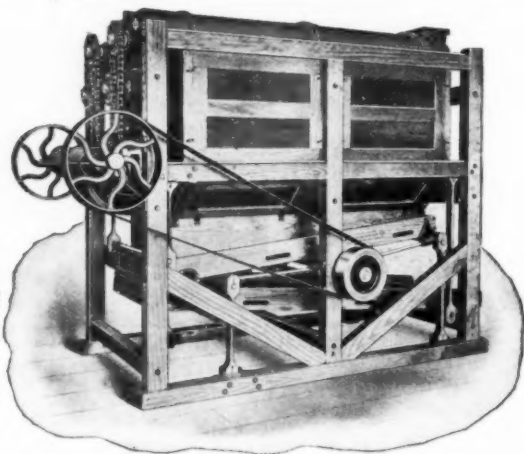
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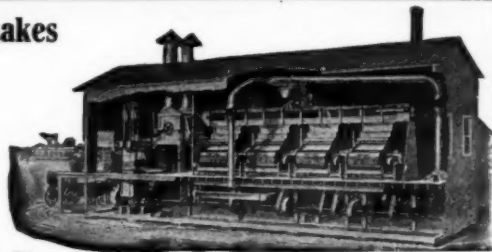
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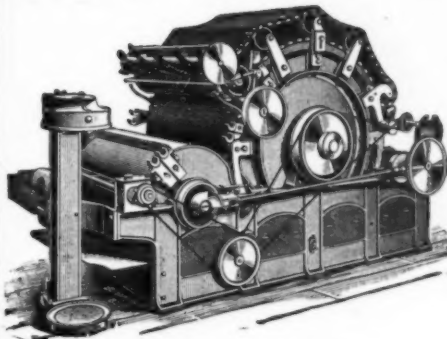
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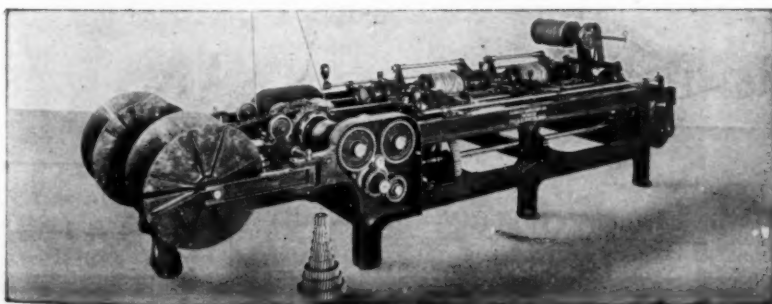


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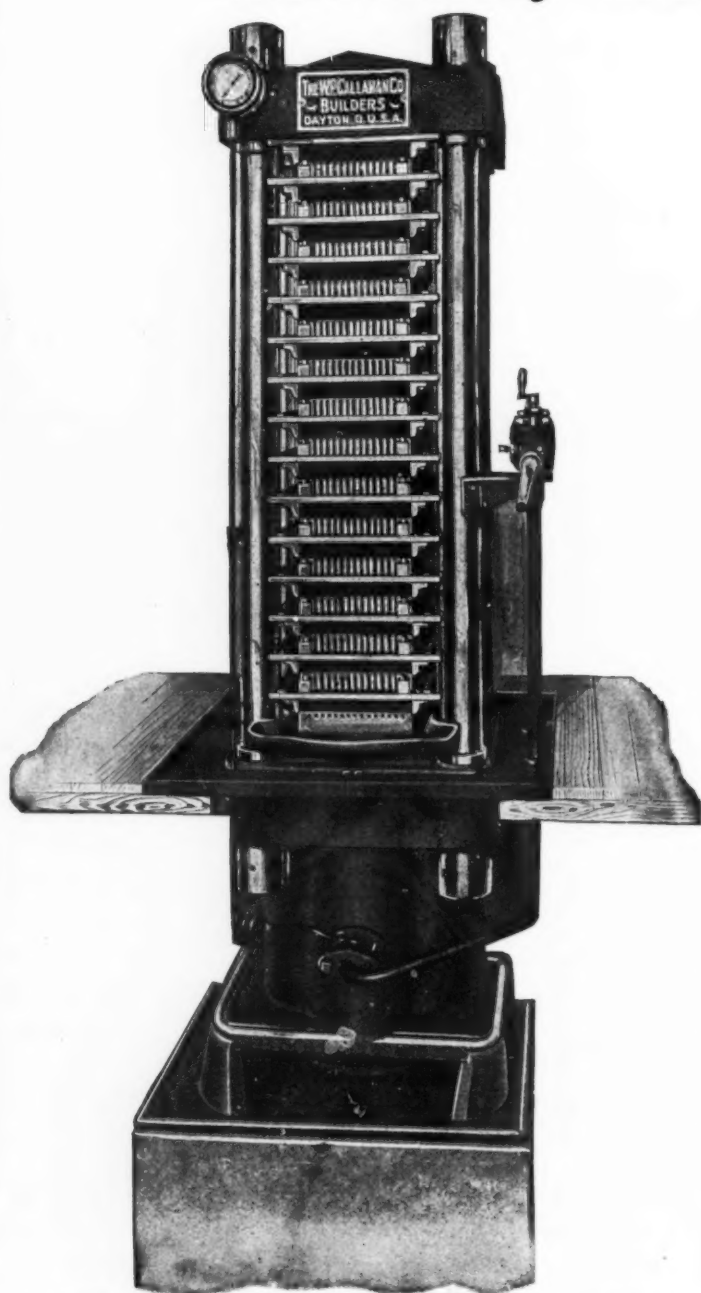
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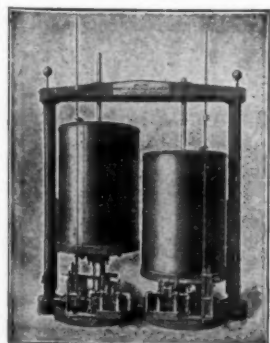
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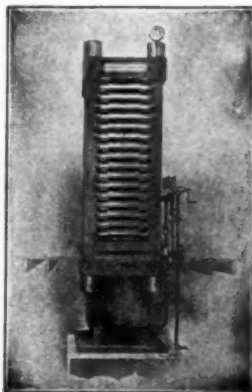
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Do you know the reason why?

The vast, and as yet practically untouched, resources of this section are beginning to attract the attention of capital. Lack of rail and water transportation facilities has rendered it almost impossible heretofore to exploit them. Today a great transformation is taking place.

The railroads of the country are awakening to the fact that, with the opening of the Panama Canal, the tremendous traffic of the South and Southwest will seek an outlet to the sea by way of the Gulf of Mexico. In anticipation of this move—which is even now well under way—they are improving and extending their lines toward the sea.

Waterfront property all along the Gulf Coast is being developed for harbor and terminal purposes.

Result—

Millions upon millions of acres of prairie lands are being converted into farms. Thousands upon thousands of people, lured by the exceptional opportunities to be found here, are pouring into the State every year.

Cities and towns are springing up as if by magic.

A great and growing demand for factory-made goods is being developed.

Factories of every description are building, and the whole territory is developing into an ant heap of human activity.

Texas City, Texas, by reason of its strategic position; the remarkable development of its waterfront for harbor and terminal purposes; the installation of the most modern and comprehensive dock, warehouse and terminal facilities, and the fact that nearly all of the railroads of Texas have their termini at or in the vicinity of this place, is now recognized as "the core of the Gulf Ports movement," and offers the manufacturer opportunities and advantages that cannot be found elsewhere.

Factories of Every Description are a Pressing Necessity of the Great Southwest

By reason of the remarkable development, the tremendous increase in population, and the general forward movement of this section, a great and growing demand for factory-made goods is being created. The factories already located here are unable to keep up with this demand, notwithstanding that they are constantly enlarging and improving their plants. Factories, therefore, are a pressing necessity of this territory. A great many are now locating here, but the field is practically unlimited.

No cash or similar bonuses are offered industries to locate a Texas City. Only self-sustaining institutions are encouraged. To these the Texas City Company, and other companies, offer a few attractive inducements; such as free factory sites, free artesian water, cheap fuel, cheap electrical power, low storage rate and low insurance rate on same, low freight handling charges, and similar other inducements, all of which are of direct benefit to the manufacturer.

COMPARATIVE STATEMENT of Reg. Tonnage and Tons Cargo of Vessels

1904 to 1910

	Reg. Tons	Tons Cargo
1904	15,171	8,712
1905	82,214	76,007
1906	102,489	84,315
1907	102,504	77,459
1908	164,203	159,835
1909	234,708	180,003
1910	441,943	352,472

Note These Figures

The figures to the right and left serve as an index to the increase in shipping via Texas City during the six years from 1904 to 1910. Here is an increase in one item alone of over forty-seven hundred per cent. in six years. It is confidently believed that the value of the commerce via Texas City for 1911 will exceed ONE HUNDRED MILLION DOLLARS.

COMPARATIVE STATEMENT of Shipping via Texas City

1904 to 1910

	No. Vessels	Value of Cargoes
1904	12	\$ 988,428
1905	87	3,774,515
1906	115	5,738,094
1907	138	6,867,775
1908	199	22,875,732
1909	208	34,138,444
1910	239	47,113,752

Literature Distributed by

Texas City Transportation Co.

Texas City, Texas

Ideal Industrial Investments in "A Land of Resources"

The territory traversed by the Tennessee Central Railroad, the direct connecting link between the Northwest and the Southeast, contains more wealth and diversity of Natural Resources than any other similar railroad mileage, and its development has just commenced.

EVERY VARIETY OF TIMBER

in the South grows along the Tennessee Central. It has received the highest awards from the Louisiana Purchase Exposition to the Appalachian. Therefore, unexcelled opportunities are offered Saw and Planing Mills, Furniture, Box, Handle, Spoke, Hub, Rim, Cedar Pencil, Shuttle, Veneering, Wood Pulp, Tannic Extract, Stave, Heading and every variety of Woodworking Factories.

ITS WEALTH OF MINERALS

Coal, Iron, Phosphate, Oil, Lithograph Stone, Marble, Cement Rock, Limestone, Sandstone, Slate, Clay, Kaolin, Fluorspar, Glass Sand, cannot fail to attract those interested in Mines, Quarries, Furnaces and Factories.

SOIL AND CLIMATE

The Soil produces profitably all the crops—Grains, Grasses, Cotton, Tobacco, Live Stock, Poultry, and Fruits of the South except the sub-tropical. The air and water are absolutely pure. No climatic sickness; no extremes of heat or cold, and where every day is work day. Operatives live cheaply and comfortably. These conditions make Ideal Industrial Locations in "A Land of Resources."

Let me tell you all about it. Address

RUTLEDGE SMITH, Industrial Agent
TENNESSEE CENTRAL RAILROAD
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Establish YOUR Business at the Base of Supplies

In Montgomery, Chattanooga, Rome, Atlanta, Macon, Columbus, Birmingham and a number of other cities and towns along the Central of Georgia Railway are factory sites which are ideal from every standpoint.

Your Iron, Coal, Coke, Timber and other raw materials are procurable at the lowest cost and in any quantities you need, as you need them, from immense supplies under your hand on every side. Efficient labor is plentiful, and water power abundant and inexpensive.

The prosperous, loyal community round about supplies a home market of great possibilities. Excellent shipping facilities open the whole country for promotion of sales on a successful competitive basis.

The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

Address **J. M. MALLORY**
Savannah, Georgia
INDUSTRIAL AGENT

**CENTRAL OF GEORGIA
RAILWAY**

Clays in the South

The U. S. Government report shows that the value of brick and tile manufactured from clay in Pennsylvania for 1909 exceeded twenty million dollars.

We can show limitless deposits of superior clay in easy reach of reasonable priced electric power, where transportation facilities offer a very wide distribution.

An ideal location for a large plant.

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General Industrial Agent Seaboard Air Line
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NORFOLK, - - VIRGINIA

VIRGINIA
KENTUCKY
TENNESSEE

Locate Your

GEORGIA
No. CAROLINA
So. CAROLINA

Factory in the Southeast

If you consider establishing any kind of manufacturing plant, and desire to reduce costs to a minimum, or to locate where markets are good and transportation facilities unsurpassed, you should by all means look into the advantages offered by the nine Southeastern States.

Labor and Raw Material Plentiful

The raw materials, as iron, coal, coke, natural gas, and woods, are all obtained here at lowest prices.

Intelligent and reliable white labor is plentiful, and as living expenses are low the wage scale is proportionate.

The population and industrial development of the Southeast are increasing rapidly, creating excellent markets, and insuring a bright future for manufacturers who establish themselves early.

Full information regarding locations along the Southern Ry. System may be obtained of

FLORIDA
ALABAMA
MISSISSIPPI

M. V. Richards, L. & I. Agt.
Southern Ry., Room 52
Washington, D. C.

SOUTHERN Ry.
Mobile & Ohio
GA. So. & FLA.

West Virginia's Natural Gas

West Virginia is the largest producer of natural gas in the country. Its estimated total output for 1909 was 166,435,000,000 cubic feet, of which less than one-third was consumed in the State.

The cost for industrial purposes averaged 6.89 cents per thousand cubic feet, the price ranging from 4 to 10 cents according to location and other manufacturing conditions, making it the cheapest fuel that can be obtained.

Couple with this abundant supply of cheap fuel, the important mineral resources of West Virginia, and it can be readily seen that unusual opportunities are offered for the economical manufacture of varied products from the State's high grade limestone, clay, glass sand, iron ore, and other deposits.

With these facts in mind consider West Virginia's location, right in the heart of our greatest activities, and the railroad facilities furnished by the Baltimore and Ohio, which with its modern equipment can distribute finished products East, West and North and through the seaports to the world's markets.

West Virginia's resources merit the earnest attention and investigation of the investor and manufacturer.

The Baltimore and Ohio through its Industrial Department always co-operates to the fullest extent not only with established enterprises along its line, but also with those contemplating the location of new industries, and detailed information will be gladly furnished.

Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

Productive Farm, Fruit and Grazing Lands Along the Clinchfield Route

One of the most important but neglected opportunities along the Clinchfield route is that of agriculture, extending from the growing of the staple crops of grains and grasses to the production of fruits and vegetables, and the raising of horses, cattle, sheep, swine and poultry.

All of these branches can be most profitably followed, because of the rich alluvial soil of the broad river bottoms and the no less rich loam of the coves and mountain sides, combined with ideal climatic and rainfall conditions.

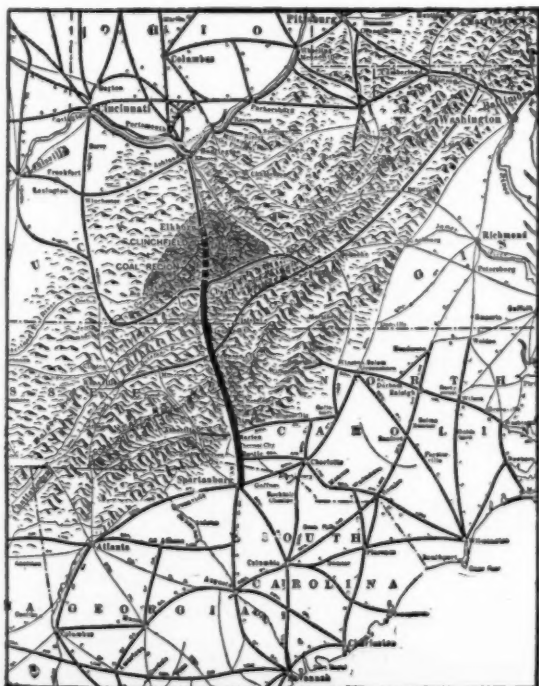
What its land can produce through intelligent cultivation has been conclusively proven by the Clinchfield's Industrial Department, through an experimental farm that had previously been worked for years, and was by no means the most desirable.

Splendid crops were raised, and it was shown that by proper effort certain success is assured.

It is especially timely to investigate the agricultural possibilities of these lands now.

The Clinchfield territory is developing remarkably, and there is an ever broadening demand throughout the country, served by the Clinchfield, for every product of the soil.

Lands are still cheap now—much cheaper than they will be when their full value shall become generally known.



Full information will be gladly furnished covering the potentiality of these lands along agricultural fruit growing and stock raising lines.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

J. J. Campion,
V.-P. and Traffic Manager

R. F. Brewer,
Industrial Agent

Johnson City, Tenn.

Openings for Packing Plants

In view of the discussion in various parts of the South and Southwest as to desirable locations for packing plants, it is well for intending investors in this branch of industry to consider the profitable business conducted by those already engaged in it and the basis of supply as well as questions of climate, labor, shipping facilities etc.

Possessing to a remarkable degree all of these necessary requirements for the live-stock industry, it is timely to call particular attention to the opportunities for such plants in Mississippi and Louisiana.

The damage done by the boll-weevil to cotton in these States taught the farmers the great value of diversification, and they soon learned that the soils of Mississippi and Louisiana were capable of producing wonderful crops of all the principal grains, grasses, and other fattening stock foods.

Consequently the raising of high-grade live-stock is steadily on the increase and the profitable returns achieved by the pioneers have stimulated others to engage in this pursuit.

The continued success and expansion of the packing plants already operated in Mississippi bear out every claim that has been made that this section possesses every requirement in an unusual degree that this industry needs.

In addition there are millions of idle acres in both States that can be taken up and utilized for stock growing, thus insuring a future supply of raw material to keep pace with the demand as it grows.

Packing plants located in Mississippi and Louisiana would also enjoy the advantage of ready access through complete shipping facilities into all parts of the South, which is one of the country's best markets, buying annually millions of dollars of such products.

All of these facts combine to present a sound basis upon which to establish successful stock packing plants.

Every condition is ripe for locating packing plants in these States, and it is most opportune to investigate these openings now.

Full details will be given to those who may desire to look into this question.

Illinois Central Railroad
Chicago, Ill.

*J. C. Clair,
Industrial
and
Immigration
Commissioner,
Chicago, Ill.*

Bring Your Veneer Package and Barrel Business to Florida

*Millions of Boxes, Crates and Barrels Used Annually
for Shipping the State's Output of Fruit and Truck*

Florida ships annually to all parts of the country an enormous amount of fruits and vegetables.

Thousands of tons of fish are also sent from the sea coast towns every year.

And these industries may be said to be still in their infancy, because new settlers are continually coming to Florida to take up the unusual and inviting opportunities which the climate and soil of that State offer.

There were shipped during the past year from one point alone on this railroad about 4,500,000 crates and boxes of fruits and vegetables, and 1000 tons of fish in barrels.

This indicates the vast amount of veneer packing crates, boxes and barrels that must be required to handle the products raised in Florida.

This State offers, therefore, unusual opportunities for the establishment of plants to make these products.

The forests of Florida yield raw material ample in volume, low in cost, and especially adapted for making both veneer packages and barrel staves.

Considering the present demand, coupled with the fact that truck raising and fruit growing are continually increasing, not only is there an already established market for packages and barrels, but also one that is getting larger and larger every year.

No State in the country presents more attractive locations for such plants, because here are combined in the same place both the raw material for manufacture and the market for the finished product.

This suggestion is worthy of careful investigation, and further details will be fully furnished to those desiring to study the situation.

Florida East Coast Railway

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

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Baltimore Bridge Co., Baltimore, Md.
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Chicago Bridge & Iron Wks., Chicago, Ill.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Farris Bridge Co., Pittsburgh, Pa.
Missouri Val. B'dge & Iron Co., Leavenworth, Kan.
Roanoke Bridge Co., Roanoke, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.
- Bridge and Structural Iron Paints.**
Carolina Portland Cement Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., New York, N. Y.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Briquetting Machinery. (Coal, Lignite, Ore.)**
Devillers, Robert, Brooklyn, N. Y.
- Buckets. (Excavators.)**
Browning Mfg. Co., Mansfield, O.
Hayward Co., New York, N. Y.
Monaghan Mfg. Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Ore, etc.)**
Brown Hoisting Mch. Co., Cleveland, O.
Browning Mfg. Co., Mansfield, O.
Caldwell & Sons Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Milwaukee, Ind.
Hayward Co., New York, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
Owen Bucket Co., Cleveland, O.
Smith Co., T. L., Atlanta, Ga.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Falls City Construction Co., Louisville, Ky.
Farris Bridge Co., Pittsburgh, Pa.
Ferro Concrete Construction Co., Cincinnati, O.
Lisle-Dunning Const. Co., Oklahoma City, Okla.
Selden-Breck Construction Co., St. Louis, Mo.
White & Co., J. G., New York, N. Y.
- Buildings. (Financed and Erected.)**
Falls City Construction Co., Louisville, Ky.
Gulf Coast Construction Co., Houston, Tex.
Lisle-Dunning Const. Co., Oklahoma City, Okla.
- Building Supplies.**
Armstrong Mfg. Co., Richmond, Va.
Carolina Portland Cement Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Southeastern Lime & Cement Co., Charleston, S. C.
Southern Building Material Co., Norfolk, Va.
- Burial-Inserted Roofing and Siding. (Flexible Cement.)**
Birmingham & Seaman Co., Chicago, Ill.
- Burners. (Oil.) (See Fuel Oil Equipments.)**
- Bushings. (Oilless, for Loose Pulleys.)**
North Amer. Metaline Co., Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebeling's Sons Co., John A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.
- Cableways. (Overhead Suspension.)**
Broderick & Bascom Rope Co., St. Louis, Mo.
Flory Mfg. Co., S. Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Roebeling's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Cans.**
New Orleans Rfg. & Metal Wks., New Orleans, La.
Southern Can Co., Baltimore, Md.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Card Clothing.**
American Supply Co., Providence, R. I.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Baldwin Equipment & Supply Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., West New Brighton, N. Y.
Males Co., The, Cincinnati, O.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Raleigh Iron Works Co., Raleigh, N. C.
Smith Co., T. L., Atlanta, Ga.
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
Union Iron Works, Selma, Ala.
- Cars. (Passenger and Freight.) (See Railroad Equipment and Supplies.)**
- Car Couplers and Knuckles.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Lighting and Heating.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Steps. (Extension.)**
Blake Car Step Works, Charlotte, N. C.
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Union Iron Works, Selma, Ala.
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
Norwalk Brass Co., Norwalk, Conn.
- Castings. (Brass and Bronze.)**
Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.
Keystone Bronze Co., Pittsburgh, Pa.
Norwalk Brass Co., Norwalk, Conn.
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
Richmond Machine Works, Inc., Richmond, Va.
Stratton & Bragg Co., Petersburg, Va.
Triumph Electric Co., Cincinnati, Ohio.
- Castings. (Iron, Gray, etc.)**
Columbian Iron Works, Chattanooga, Tenn.
Gibbs Machinery Co., Columbia, S. C.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glanmorgan Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
Poole Engineering & Machine Co., Baltimore, Md.
Roanoke Iron Works, Inc., Roanoke, Va.
Robins Conveying Belt Co., New York, N. Y.
Ross-Meehan Foundry Co., Chattanooga, Tenn.
Stratton & Bragg Co., Petersburg, Va.
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Valk & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Kellnace Steel Casting Co., Pittsburgh, Pa.
- Ceilings. (Metal.)**
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.
Edwards Manufacturing Co., Cincinnati, O.
Hartey Steel Co., O. K., St. Louis, Mo.
Keighley Metal Cell & Mfg. Co., S. Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Cement.**
Alpha Portland Cement Co., Easton, Pa.
American Cement Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
Cincinnati Portland Cement Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Ironport Portland Cement Co., Ironport, O.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Kosmos Portland Cement Co., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Baltimore, Md.
Southern Lime & Cement Co., Charleston, S. C.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
Tidewater Portland Cement Co., Baltimore, Md.
- Cement. (Liquids.)**
Glidden Vanish Co., Cleveland, O.
- Cement Machinery.**
Aising Engineering Co., J. R., New York, N. Y.
Power & Mining Machinery Co., Ouday, Wis.
Raymond Bros. Impact Pair Co., Chicago, Ill.
- Centers. (Collapsible Steel.)**
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
- Chain Blocks.**
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Weimer Chain & Iron Co., Lebanon, Pa.
- Channellers.**
Ingersoll-Rand Co., New York, N. Y.
- Checks, Metal. (Factory, Time and Merchandise.)**
American Railway Supply Co., New York, N. Y.
- Chemical and Drug Machinery.**
Campbell, P. F., Philadelphia, Pa.
- Chemists.**
Burn, Harry, Birmingham, Ala.
Davis, Geo. C., Philadelphia, Pa.
Frederick & Robertson, Richmond, Va.
McKenna, Dr. Chas. F., New York, N. Y.
- Chimneys. (Steel-Concrete.)**
Specialty Eng. Co., Houston, Tex.
Weber Chimney Co., Chicago, Ill.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Phila., Pa.
- Chucks.**
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) (See Industrial, Agricultural and Commercial Opportunities.)**
- Clayworking Machinery. (See Brick and Clayworking Machinery.)**
- Cleansing Compound. (Floors, etc.)**
India Alkal Works, Boston, Mass.
- Clocks. (Electro-Self-Winding.)**
Electro-Clock Co., Baltimore, Md.
- Clocks. (Time Recorders.)**
Kaiser, Louis E., Baltimore, Md.
- Clocks. (Watchman.)**
Holtz-Cabot Electric Co., Boston, Mass.
Kaiser, Louis E., Baltimore, Md.
- Clutches.**
Dodge Manufacturing Co., Milwaukee, Ind.
Positive Clutch & Pulley Works, Buffalo, N. Y.
- Coal.**
Alabama Coal & Iron Co., Birmingham, Ala.
Cincinnati Coal Corp., Spartanburg, S. C.
Cincinnati Fuel Co., Spartanburg, S. C.
Consolidated Coal Co., Inc., New York, N. Y.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Tennessee Coal, Iron & R. R. Co., B'ham, Ala.
- Coal Briquetting Machinery.**
Devillers, Robert, Brooklyn, N. Y.

- Coal Cutters.**
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
McKlerman-Terry Drill Co., New York, N. Y.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Hoisting Mch. Co., Cleveland, O.
Hayward Co., New York, N. Y.
Hunt Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Robins Conveying Belt Co., New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Coal Tar and By-Products.**
Barrett Mfg. Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
- Coke.**
Alabama Coal & Iron Co., Birmingham, Ala.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Rogers, Brown & Co., Cincinnati, O.
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Collapsible Steel Forms.** (For Concrete Work.)
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
Concrete Form & Engine Co., Detroit, Mich.
- Concrete Construction.** (Steel Reinforcement.)
American Steel & Wire Co., Chicago, Ill.
Brown Hoisting Machinery Co., Cleveland, O.
Concrete-Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Ferro Concrete Construction Co., Cincinnati, O.
Foster-Creighton-Gould Co., Nashville, Tenn.
Jeffrey Mfg. Co., Columbus, O.
Reichert Mfg. Co., Milwaukee, Wis.
Specialty Eng. Co., Houston, Tex.
Wight & Co., W. N., New York, N. Y.
- Concrete Curb Protection.** (Steel.)
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Dams.**
Ambursen Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Concrete Floor Dressing.** (Waterproof.)
Gibben Varulsh Co., Cleveland, O.
- Concrete Forms.** (Metal.)
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
Reichert Mfg. Co., Milwaukee, Wis.
- Concrete Forms.** (Steel Collapsible.)
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
Concrete Form & Engine Co., Detroit, Mich.
- Concrete Mixers.**
Carolina Portland Cement Co., Charleston, S. C.
Jeffrey Mfg. Co., Columbus, O.
Marsh-Capron Mfg. Co., Chicago, Ill.
Milwaukee Concrete Mixer & Mch. Co., Milwaukee, Wis.
Smith Co., T. L., Atlanta, Ga.
Standard Scale & Supply Co., Pittsburgh, Pa.
Waterloo Cement Mch. Co., Waterloo, Iowa.
- Concrete Pile.** (Corrugated.)
The Underground Const. Co., St. Louis, Mo.
- Concrete Reinforcing Bars.**
Carnege Steel Co., Pittsburgh, Pa.
Concrete-Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Concrete Tiles.**
Universal Concrete Tile Co., New Orleans, La.
- Condensers.**
Alberger Condenser Co., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
Wheeler Condenser & Eng. Co., New York, N. Y.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Contractors.** (Hydro-Electric Developments.)
Multiple Arch Hyd. Cons. Co., Ltd., Spartanburg, S. C.
- Contractors' Machinery and Supplies.** (See also Hoisting Machinery.)
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Case Threshing Mch. Co., J. I., Racine, Wis.
Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.
Exeter Machine Works, Pittsboro, Pa.
Flory Mfg. Co., S., Bangor, Pa.
Hyde Bros. & Co., New York, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Linton, W. J., New York, N. Y.
Males Co., The, Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Maryland Equipment & Supply Co., Baltimore, Md.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Monaghan Mch. Co., Chicago, Ill.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Owen Bucket Co., Cleveland, O.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors' Supply Co., New York, N. Y.
Robins Conveying Belt Co., New York, N. Y.
Smith Co., T. L., Atlanta, Ga.
Stuebner, Iron Works, G. L., Long Island City, New York, N. Y.
Williamson Bros. Co., Philadelphia, Pa.
- Conveying Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Hoisting Mch. Co., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Milwaukee, Ind.
Flory Mfg. Co., S., Bangor, Pa.
Hayward Co., New York, N. Y.
Hunt Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Robins Conveying Belt Co., New York, N. Y.
- Cooling Towers.**
Alberger Condenser Co., New York, N. Y.
Wheeler Condenser & Eng. Co., New York, N. Y.
- Cordage.**
American Mfg. Co., New York, N. Y.
Eberick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Turner Co., J. Spencer, New York, N. Y.
Whitlock Cordage Co., New York, N. Y.
- Cordage Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
- Corn-Mill Machinery.**
Nordberg & Marmon Co., Indianapolis, Ind.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Cotton Duck.**
Turner Co., J. Spencer, New York, N. Y.
- Cotton Oil and Products.**
American Cotton Oil Co., New York, N. Y.
- Cotton Yarns.** (Commission Merchants.)
Paulson, Linkroom & Co., New York, N. Y.
- Cotton-Gin Machinery.**
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Columbia, S. C.
Van Winkle Gin & Machine Co., Atlanta, Ga.
- Cotton-Mill Machinery.**
American Mach. & Mfg. Co., Charlotte, N. C.
American Supply Co., Providence, R. I.
Draper Co., Hopedale, Mass.
Kitson Machine Shop, Lowell, Mass.
Lowell Machine Shop, Lowell, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Pettie Co., New Upper Falls, Mass.
Whitlin Machine Works, Whitinsville, Mass.
Whitinsville Spinn'g Ring Co., Whitinsville, Mass.
- Cotton-Mill Supplies.**
American Supply Co., Providence, R. I.
Whitinsville Spinn'g Ring Co., Whitinsville, Mass.
- Cottonseed-Oil Machinery.**
Buckeye Ironing & Press Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Callahan Co., W. P., The, Dayton, O.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Rand Bros. Co., Chicago, Ill.
Van Winkle Gin & Machine Co., Atlanta, Ga.
- Couplings.**
American Spiral Pipe Works, Chicago, Ill.
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Dodge Manufacturing Co., Milwaukee, Ind.
Goldens Foundry & Machine Co., Columbus, Ga.
Shuchler-Scott Co., Baltimore, Md.
Wood's Sons, T. B., Chambersburg, Pa.
- Couplings.** (Car.)
Weimer Chain & Iron Co., Lebanon, Pa.
- Couplings.** (Hose, Air, Gas, Steam and Water.)
National Tube Co., Pittsburgh, Pa.
- Covering.** (Pipe, Boiler, etc.)
Carolina Portland Cement Co., Charleston, S. C.
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
- Cranes.** (Locomotive.)
American Hoist & Derrick Co., St. Paul, Minn.
Brown Hoisting Machinery Co., Cleveland, O.
Browning Engineering Co., Cleveland, O.
Exeter Machine Works, Pittsboro, Pa.
Ohio Locomotive Crane Co., Bucyrus, Ohio.
- Cranes.** (Traveling, Hand, Power, Hydraulic.)
Brown Hoisting Machinery Co., Cleveland, O.
Hayward Co., New York, N. Y.
Lane Mfg. Co., Montpelier, Vt.
Northern Engineering Works, Detroit, Mich.
Speidel, J. G., Reading, Pa.
- Crays.**
Lowell Crayon Co., Lowell, Mass.
- Crematories.** (Garbage.)
Specialty Eng. Co., Houston, Tex.
- Creosote.**
Carolina Portland Cement Co., Charleston, S. C.
- Creosote Oil.**
Atlantic Turpentine & Refin'g Co., Savannah, Ga.
- Creosoted Wood Block.** (Contractors for Laying.)
Creosoted Wood Block Pav. Co., New Orleans, La.
- Creosoting Works.**
Gulfport Creosoting Co., Gulfport, Miss.
Internat'l Creosot'g & Cons. Co., Galveston, Tex.
National Lumber & Creos. Co., Texarkana, Ark.
Southern Creosoting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossarms and Pins.**
Carolina Electrical Co., Raleigh, N. C.
Internat'l Creosot'g & Cons. Co., Galveston, Tex.
Southern Creosoting Co., Ltd., Slidell, La.
Western Electric Co., New York, N. Y.
- Crossings.** (See Railroad Frogs and Switches.)
- Crosstie Machine.**
Standard Cross Tie Mch. Co., New Orleans, La.
- Crossties.**
Internat'l Creosot'g & Cons. Co., Galveston, Tex.
National Lumber & Creos. Co., Texarkana, Ark.
Taylor & Co., S. E., Gulfport, Miss.
Southern Creosoting Co., Ltd., Slidell, La.
Universal Concrete Tie Co., New Orleans, La.
- Crossties.** (Reinforced Concrete.)
Universal Concrete Tie Co., New Orleans, La.
- Crossties.** (Steel.)
Carnege Steel Co., Pittsburgh, Pa.
- Crushers.** (Corn and Cob.)
Gardner Crusher Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Crushers.** (Rock.)
Austin Mfg. Co., Chicago, Ill.
Case Threshing Mch. Co., J. I., Racine, Wis.
Creason Co., Geo. V., Philadelphia, Pa.
Gardner Crusher Co., New York, N. Y.
Lehigh Crusher Co., Ltd., Catasauquus, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Walker & Elliott, Wilmington, Del.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Culverts.** (Corrugated Metal.)
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buechel, Ky.
New Orleans Rfg. & Metal Wks., New Orleans, La.
North Carolina Metal Culv. Co., Greensboro, N. C.
Roanoke Bridge Co., Roanoke, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.
- Culverts.** (Vitrified Pipe.)
Bibb Sewer Pipe Co., Macon, Ga.
Stevens Sons Co., H., Macon, Ga.
- Cupola Furnaces.**
Northern Engineering Works, Detroit, Mich.
Paxson Co., J. W., Philadelphia, Pa.
Petroleum Iron Works Co., Sharon, Pa.
- Cuts.** (Half-tone, Line, etc.)
Baltimore Maryland Engr. Co., Baltimore, Md.
- Cutter Heads.** (Woodworking.)
Shlumer & Sons, Samuel J., Milton, Pa.
- Cutter Grinders.**
Abrasive Material Co., Philadelphia, Pa.
Vitrified Wheel Co., Westfield, Mass.
- Dams.** (Multiple Arch Masonry.)
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
- Dams.** (Reinforced Concrete.)
Ambursen Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Derricks and Derrick Fittings.**
American Hoist & Derrick Co., St. Paul, Minn.
Monaghan Machine Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Waterloo Cement Mch. Co., Waterloo, Iowa.
- Designers and Illustrators.** (Printed Matter.)
Baltimore Maryland Engr. Co., Baltimore, Md.
- Die Blocks.**
Erie Forge Co., Erie, Pa.
- Ditching Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
American Steel Bridge Co., Ft. Wayne, Ind.
Browning Mfg. Co., Mansfield, O.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Williams Co., The G. H., Cleveland, O.
- Doors.** (Birch Veneered.)
Carolina Portland Cement Co., Charleston, S. C.
Mansell & Felton Lumber Co., Macon, Ga.
- Doors.** (Steel Rolling.)
Kinner Mfg. Co., Columbus, O.
- Doors.** (Tin Clad.)
Victor Mfg. Co., Newburyport, Mass.
- Doors.** (Partitions, Metallic.)
Dahlstrom Metal Door Co., Jamestown, N. Y.
United States Metal Products Co., New York, N. Y.
- Doors, Sash and Blinds.**
Columbus Iron Works Co., Columbus, Ga.
Mansell & Felton Lumber Co., Macon, Ga.
- Draftsmen's Supplies.**
Kouff & Emser, Hoboken, N. J.
Weber & Co., F., Philadelphia, Pa.
- Dredge Chains.**
Weimer Chain & Iron Co., Lebanon, Pa.
- Dredges.** (See Excavating Machinery.)
- Drills.** (Pneumatic.) (See also Drills, Rock and Mining.)
- Drills.** (Prospecting.)
Fort Wayne Electric Works, Fort Wayne, Ind.
Ingersoll-Rand Co., New York, N. Y.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
McKlerman-Terry Drill Co., New York, N. Y.
- Drills.** (Rock and Mining.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Fort Wayne Electric Works, Fort Wayne, Ind.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
McKlerman-Terry Drill Co., New York, N. Y.
Wilkes Bros., Jersey City, N. J.
- Drills.** (Twist.)
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
American Spiral Pipe Works, Chicago, Ill.
Richmond Forgings Corporation, Richmond, Va.
- Drop Forging Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Drying Machinery.**
American Blower Co., Detroit, Mich.
American Process Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Ruggles-Cole Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Drykilns.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Union Iron Works Co., Selma, Ala.
- Dumbwaiters.**
Hollister-Whitney Co., Quincy, Ill.
Sidney Elevator & Mfg. Co., Sidney, O.
Speidel, J. G., Reading, Pa.
- Dump Wagons and Wagon Boxes.**
Case Threshing Mch. Co., J. I., Racine, Wis.
Eagle Wagon Works, Auburn, N. Y.
Troy Wagon Works Co., Troy, O.
- Dust-Collecting Systems.**
Buffalo Forge Co., Buffalo, N. Y.
Savannah Blow Pipe Co., Savannah, Ga.
Standard Blower & Metal Mfg. Co., Atlanta, Ga.
- Dynamite.**
Du Pont de Nemours Powder Co., E. I., Wilmington, Del.
- Dynamics and Motors.** (Steam Turbine.)
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Southwark Fdry. & Mch. Co., Philadelphia, Pa.
Troy Steam Turbine Co., New York, N. Y.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Eaves.** (Trough.)
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Ejectors.** (Auto Sewage.)
Blaisdell Machinery Co., Bradford, Pa.
- Electric Machinery.** (Dynamoes, Generators, Motors, etc.)
Allis-Chalmers Co., Milwaukee, Wis.
American Engine Co., Bound Brook, N. J.
American Machine Co., Louisville, Ky.
Crocker-Wheeler Co., Amper, N. J.
Engberg's Elect. & Mch. Wks., St. Joseph, Mich.
Fairbanks, Morse & Co., Chicago, Ill.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Kleinhaus, H., Pittsburgh, Pa.
Lee Electric Co., Baltimore, Md.
Miller-Owen Elec. Co., Pittsburgh, Pa.
Piedmont Electric Co., Asheville, N. C.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Riker Machinery Co., New York, N. Y.
Robbins & Myers Co., Springfield, O.
Southwark Fdry. & Mch. Co., Philadelphia, Pa.
Sturtevant Co., B. F., Hyde Park, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Contractors, Instruments and Supplies.**
American Mach. & Mfg. Co., Charlotte, N. C.
Crocker-Wheeler Co., Amper, N. J.
Electrical Engineers' Equip. Co., Chicago, Ill.
Engberg's Elect. & Mch. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Johns-Manville Co., H. W., New York, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Levy, Deronda, Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Power-House Supplies.**
Electrical Engineers' Equip. Co., Chicago, Ill.
- Electro Magnet.** (See Magnet Electro.)
- Elevating, Conveying and Power Transmission Machinery.** (See also Conveying Mch. and Power Transmission Mch.)
Jeffrey Mfg. Co., Columbus, O.
- Elevators.**
Allis-Chalmers Elevator Co., Philadelphia, Pa.
American Machine Co., Louisville, Ky.
Curran Elevator Co., James H., Cincinnati, O.
Hollister-Whitney Co., Quincy, Ill.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
McKerran Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Sidney Elevator & Mfg. Co., Sidney, O.
Speidel, J. G., Reading, Pa.
Vanderbilt Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.
- Elevator Safety Appliance.**
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Elevator Buckets.**
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Mfg. Co., Milwaukee, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Philadelphia, Pa.
- Elevator Enclosures and Cabs.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggott & Co., Baltimore, Md.
Jones & Co., L. E., Baltimore, Md.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.
Southern Wire & Iron Mfg. Co., Dallas, Tex.
- Elevator Rope.** (See Wire Rope.)
- Elevator Safety Gates.**
Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels.** (See Grinding Wheels.)
- Engineers—**
COMBUSTION.
Improved Equipment Co., New York, N. Y.
- CONSULTING.
Graham, Edgar M., Muskogee, Okla.
Jaudon Engineering Co., H. B., Savannah, Ga.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
Macfarren, S. J., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Quick, Alfred M., Baltimore, Md.
Woodmansee, Davidson & Session, Chicago, Ill.
Young, W. W., New York, N. Y.
- DESIGNING—CONSTRUCTING.
Brindley Co., New York, N. Y.
Foster-Creighton-Gould Co., Nashville, Tenn.
Gulf Coast Const. Co., Houston, Tex.
Hague, John, St. Louis, Mo.
Harlow Co., James H., Baltimore, Md.
Jaudon Engineering Co., H. B., Savannah, Ga.
Klotz, B. G., San Antonio, Tex.
Specialty Eng. Co., Houston, Tex.
Stone & Webster Eng. Co., Boston, Mass.
Summers & Co., L. L., Chicago, Ill.
White & Co., J. G., New York, N. Y.
- DESIGNING, CONSTRUCTING, POWER PLANTS, ETC.
Brindley Co., New York, N. Y.
Dodge, Day & Zimmerman, Philadelphia, Pa.
Emory & Eisenberg, Philadelphia, Pa.
Lea, Henry I., Chicago, Ill.
Lockwood, Greene & Co., Boston, Mass.
MacLauchlan Eng. Co., J. H., Baltimore, Md.
Manning-Hughes Co., Charlotte, N. C.
Multiple Arch Hyd. Cons. Co., Ltd., Spartanburg, S. C.
Quick, Alfred M., Baltimore, Md.
Sirmine, J. E., Greenville, S. C.
Spiker, Wm. C., Atlanta, Ga.
Stevens, John A., Lowell, Mass.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitfield, Geo. H., Richmond, Va.
- DRAINAGE.
Brindley Co., New York, N. Y.
Morgan Engineering Co., Memphis, Tenn.
- EFFICIENCY.
Macfarren, S. J., Washington, D. C.
- ELECTRIC, CIVIL, ETC.
Arnold Co., The, Chicago, Ill.
Brindley Co., New York, N. Y.
Cottrill & Cottrill, Greenwood, S. C.
Crocker-Wheeler Co., Amper, N. J.
Drane, Brent S., Charlotte, N. C.
Emory & Eisenberg, Philadelphia, Pa.
Kellholtz, P. O., Baltimore, Md.
Layman, E. F., Cincinnati, O.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
Manning-Hughes Co., Charlotte, N. C.
Morgan Engineering Co., Memphis, Tenn.
Potter, Alexander, New York, N. Y.
Reading & Howard, Baltimore, Md.
Rucker, B. Parks, Charlotte, N. C.
Waldo, W., Houston, Tex.
White & Co., J. G., New York, N. Y.
Whitfield, Geo. H., Richmond, Va.
Young Co., C. S., San Antonio, Tex.
- GAS.
Lea, Henry I., Chicago, Ill.
- GEOLOGICAL.
Bureau of Assoc. Geological Engineers, Boston, Mass.
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
- HYDRAULIC, SANITARY AND SEWERAGE.
Brindley Co., New York, N. Y.
Burgwyn, C. P. E., Richmond, Va.
Harlow Co., James H., Baltimore, Md.
Hutton, T. Chalkley, Wilmington, Del.
Manning-Hughes Co., Charlotte, N. C.
McCrory, Co., Inc., The J. B., Atlanta, Ga.
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Specialty Eng. Co., Houston, Tex.
Tucker & Laxon, Charlotte, N. C.
- ICE AND REFRIGERATING.
Hague, John, St. Louis, Mo.
Tait-Nordmeyer Eng. Co., St. Louis, Mo.

- Engineers—**
ILLUMINATING.
Holophane Co., Newark, Ohio.
- LANDSCAPE.**
Drane, Brent S., Charlotte, N. C.
Redding & Howard, Baltimore, Md.
- REINFORCED CONCRETE CONSTRUCTION, BUILDINGS, BRIDGES, ETC.**
Concrete Steel Engineering Co., New York, N. Y.
Gardner & Howe, Memphis, Tenn.
Layman, E. F., Cincinnati, O.
- WATER-WORKS.**
Burgwyn, C. P. E., Richmond, Va.
Myers, E. W., Greensboro, N. C.
- Engines.**
GAS AND GASOLINE.
Blaisdell Machinery Co., Bradford, Pa.
Bogart Gas Power Eng. Co., Buffalo, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Mitsui, A. New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Power Mfg. Co., Lima, Ohio.
Standard Gas Power Co., Atlanta, Ga.
Westinghouse Machine Co., The, Pittsburgh, Pa.
- OIL.**
Covington Mch. Co., New York, N. Y.
Mitsui, A. New York, N. Y.
Power Mfg. Co., Lima, Ohio.
- Engines. (Steam.)**
Allis-Chalmers Co., Milwaukee, Wis.
American Blower Co., Detroit, Mich.
American Engine Co., Bound Brook, N. J.
American Hoist & Derrick Co., St. Paul, Minn.
Ames Iron Works, Oswego, N. Y.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., Erie, Pa.
Brownell Co., The, Dayton, O.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Cooper Co., C. & G., Mt. Vernon, O.
Engberg's Elect. & Mech. Wks., St. Joseph, Mich.
Gibbs Machinery Co., Columbus, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Griffith & Wedge Co., The, Zanesville, O.
Harrishburg Fdry. & Mach. Wks., Harrisburg, Pa.
Hooven, Owen, Rentzel Co., Hamilton, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Leffel & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Murray Iron Works Co., Burlington, Ia.
Oil City Boiler Co., Oil City, Pa.
Phoenix Iron Works Co., Mendville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Schiffel's Sons Co., J. S., Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Southern Engine & Boiler Works, Jackson, Tenn.
Sturtevant Co., B. F., Hyde Park, Mass.
Union Iron Works Co., Selma, Ala.
Vilter Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburgh, Pa.
- Envelope Sealer and Stamper.**
Commercial Sales & Mfg. Co., Oberlin, O.
- Envelopes.**
Young & Selden Co., Baltimore, Md.
- Excavating Machinery. (Steam Shovels, etc.)**
American Locomotive Co., New York, N. Y.
American Steel Dredge Co., Ft. Wayne, Ind.
Baldwin Equipment & Supply Co., Chicago, Ill.
Browning Mfg. Co., Mansfield, O.
Bucyrus Co., Milwaukee, Wis.
Cable Excavator Co., Philadelphia, Pa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Elmira, N. Y.
Lidgerwood Mfg. Co., New York, N. Y.
Males Co., Cincinnati, O.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Williams Co., The G. H., Cleveland, O.
- Excelsior Machinery.**
Kline, Lewis T., Alpena, Mich.
- Exhaust Heads.**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.
Greenwald Co., I. & E., Cincinnati, O.
Hoppes Mfg. Co., Springfield, O.
- Exhibits. (Machinery Builders' Equipment and Supplies.)**
Bourse, The, Philadelphia, Pa.
Builders' Exchange, Baltimore, Md.
- Expansion Joints.**
Alberger Condenser Co., New York, N. Y.
Badger & Sons Co., E. B., Boston, Mass.
- Explosives.**
du Pont-de Nemours Powder Co., E. I., Wilmington, Del.
- Extension Steps. (For Railroad Coaches.)**
Blake Car Step Works, Charlotte, N. C.
- Factory Sites. (Town and Railroad.)** [See Industrial, Agricultural and Commercial Opportunities.]
- Fans. (Electric.)**
General Electric Co., Schenectady, N. Y.
Robbins & Myers Co., Springfield, O.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Fans. (Ventilating.)** [See Blowers, Exhaust Fans.]
- Fastener Driving Machine. (Corrugated Joint.)**
Raranne Machine Co., St. Joseph, Mich.
- Feed-Water Heaters and Purifiers.**
Alberger Condenser Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, New York, N. Y.
Brownell Co., Dayton, O.
Exeter Machine Works, Pittsburg, Pa.
Gibbs Machinery Co., Columbus, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Hoppes Mfg. Co., Springfield, O.
McAdoo, Thomas, Philadelphia, Pa.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Seafie & Sons Co., Wm. B., Pittsburg, Pa.
Stewart Heater Co., Buffalo, N. Y.
Wilmington Iron Works, Wilmington, N. C.
- Feed-Water Heater and Purifier and Oil Separator Combined.**
Blake & Knowles Steam Pump Works, New York, N. Y.
Stewart Heater Co., Buffalo, N. Y.
- Felt. (Building, Sheathing.)**
Barrett Mfg. Co., Philadelphia, Pa.
- Fencing. Entrance Gates. (Iron, Steel, Wire.)**
American Steel & Wire Co., Chicago, Ill.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Bow Wire Works, Louisville, Ky.
- Dufur & Co., Baltimore, Md.**
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.
- Fertilizer Machy. [See also Phosphate Machy.]**
Campbell, P. F., Philadelphia, Pa.
Pratt Eng. & Mch. Co., Atlanta, Ga.
Smith Co., T. L., Atlanta, Ga.
Vaik & Murdock Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.
Wilmington Iron Works, Wilmington, N. C.
- Files.**
Barnett Co., G. & H., Philadelphia, Pa.
Delta File Works, Philadelphia, Pa.
Nicholson File Co., Providence, R. I.
- Filters. (Water, for Domestic and Industrial Purposes.)**
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
Lynn-Superior Co., The, Cincinnati, O.
New York Con. Jewell Fil. Co., New York, N. Y.
Roberts Filter Mfg. Co., Philadelphia, Pa.
Seafie & Sons Co., Wm. B., Pittsburg, Pa.
Tucker & Laxton, Charlotte, N. C.
- Financial Publication.**
Financial Review, New York, N. Y.
- Fire Alarm Boxes.**
Balto. Mch. Products Co. (Relay Station P. O.), Baltimore, Md.
- Fire Clay Brick. [See Brick, Fire Clay.]**
- Fire Box Bricks.**
Ashland Fire Brick Co., Ashland, Ky.
- Fire Door Fixtures.**
Peters & Son, Jas., Philadelphia, Pa.
Victor Mfg. Co., Newburyport, Mass.
- Fire Extinguishers.**
Badger & Sons Co., E. B., Boston, Mass.
General Fire Extinguisher Co., Providence, R. I.
Kaiser, Louis E., Baltimore, Md.
- Fire Escapes.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Fire Insurance.**
Hartford Fire Insurance Co., Hartford, Conn.
- Fireplaces. (Artistic Brick.)**
Fiske & Co., Inc., New York, N. Y.
- Fireproof Building Construction. (Steel.)** [See Concrete Construction.]
- Fireproof Building Material.**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
- Fireproof Doors and Shutters.**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
Klineair Mfg. Co., Columbus, O.
New Orleans Roof & Metal Co., New Orleans, La.
Richmond Safety Gate Co., Richmond, Ind.
United States Metal Products Co., New York, N. Y.
Victor Mfg. Co., Newburyport, Mass.
- Fireproof Windows. [See Window Frames and Sashes (Fireproof).]**
- Fire Protection Hardware.**
Peters & Son, Jas., Philadelphia, Pa.
- Flanges. (Iron and Steel.)**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dart Manufacturing Co., E. M., Providence, R. I.
General Fire Extinguisher Co., Providence, R. I.
Glimmerman Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
National Tube Co., Pittsburgh, Pa.
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn.
Wood & Co., R. D., Philadelphia, Pa.
- Flexible Joints.**
Moran Flex. Steam Joint Co., Inc., Louisville, Ky.
- Flooring. (Cement.)**
Dagostin & Angelini Bros., Montgomery, Ala.
- Flooring. (Hardwood, Maple, Oak.)**
Carroll Portland Cement Co., Charleston, S. C.
Northern Mantel Co., W. J., Memphis, Tenn.
Nashville Hardwood Flooring Co., Nashville, Tenn.
- Flour and Grist Mill Machinery and Supplies.**
Caldwell & Sons Co., H. W., Chicago, Ill.
Gibbs Machinery Co., Columbus, S. C.
Nurdyke & Marmon Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Veech & Co., L. R., Louisville, Ky.
Wolf Co., Chambersburg, Pa.
- Flushtank Regulator.**
Modern Iron Works, Quincy, Ill.
- Foot Valves.**
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Forges.**
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Forgings.**
Richmond Forgings Corporation, Richmond, Va.
Welmer Chain & Iron Co., Lebanon, Pa.
- Forgings. (Hammered.)**
Erie Forge Co., Erie, Pa.
- Forms. (Steel Collapsible.)**
Concrete Form & Engine Co., Detroit, Mich.
- Foundations. (Waterproof.)**
Underground Constr. Co., The, St. Louis, Mo.
- Foundations. (Open or Pneumatic.)**
Missouri Val. Bridge & Iron Co., Leavenworth, Kan.
- Foundry Equipment and Supplies.**
Paxson Co., J. W., Philadelphia, Pa.
- Frogs. [See Railroad Frogs and Switches.]**
- Fuel Economizer.**
Green Fuel Economizer Co., Mattawan, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Fuel Oil.**
Gulf Refining Co., Pittsburg, Pa.
Texas Co., The, New York, N. Y.
- Fuel Oil Equipment.**
Petroleum Iron Works Co., Sharon, Pa.
- Fuses, Bases and Fittings.**
Johns-Manville Co., H. W., New York, N. Y.
- Galvanized Steel and Iron.**
American Sheet & Tin Plate Co., Pittsburg, Pa.
J. C. H. Galvanizing Co., Philadelphia, Pa.
La Belle Iron Works, Steubenville, O.
McCalla, Harold, Philadelphia, Pa.
New Orleans Roof & Metal Co., New Orleans, La.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Garages. (Fireproof and Portable.)**
Harry Steel Co., O. K., St. Louis, Mo.
- Gas Blowers. (Turbine.)**
Terry Steam Turbine Co., New York, N. Y.
- Gas Compressors.**
Blaisdell Machinery Co., Bradford, Pa.
Ingersoll-Rand Co., New York, N. Y.
- Gas Engines. [See Engines, Gas.]**
- Gas Holders.**
Chicago Bridge & Iron Wks., Chicago, Ill.
- Gas Plants.**
Western Gas Construction Co., Ft. Wayne, Ind.
- Gas Plants and Benches.**
Improved Equipment Co., New York, N. Y.
- Gas Producers.**
Bogart Gas Power Eng. Co., Buffalo, N. Y.
Improved Equipment Co., New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Standard Gas Power Co., Atlanta, Ga.
Westinghouse Machine Co., Pittsburgh, Pa.
Wood & Co., R. D., Philadelphia, Pa.
- Gasoline and Kerosene.**
Gulf Refining Co., Pittsburg, Pa.
Texas Co., The, New York, N. Y.
- Gas and Steam Fitters' Tools.**
Saunders' Sons, D., Yonkers, N. Y.
- Gaskets. (Rubber.)**
N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Gears.**
Albro-Clem Elevator Co., Philadelphia, Pa.
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dayton Globe Iron Works Co., Dayton, O.
Dodge Manufacturing Co., Milwaukee, Ind.
Earle Gear & Machine Co., The, Philadelphia, Pa.
Jeffrey Mfg. Co., Elmira, N. Y.
Poele Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Trump Mfg. Co., Springfield, O.
- Geologists.**
Bureau of Assoc. Geological Engineers, Boston, Mass.
Froehling & Robertson, Richmond, Va.
- Glass. (Plate, etc.)**
Blawiegar & Co., Memphis, Tenn.
Holophane Co., Newark, Ohio.
- Governors.**
Pickering Governor Co., Portland, Conn.
- Grain Elevator Supplies.**
Caldwell & Sons Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Milwaukee, Ind.
Jeffrey Mfg. Co., Elmira, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Granite.**
Harris Granite Quarries Co., Salisbury, N. C.
- Graphite.**
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Grates and Grate Bars.**
Thomas Grate Bar Co., Birmingham, Ala.
- Gravel.**
Arundel Sand & Gravel Co., Baltimore, Md.
Lathrop & Co., C. P., Richmond, Va.
- Grease.**
Albany Lubricating Co., New York, N. Y.
- Grease Cups.**
Albany Lubricating Co., New York, N. Y.
- Greases and Lubricating Compounds.**
Galena Signal Oil Co., Franklin, Pa.
Robinson & Son Wm. C., Baltimore, Md.
Texas Co., The, New York, N. Y.
- Grinders. (Gypsum, Limestone, etc.)**
Gardner Crusher Co., New York, N. Y.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Grinding Wheels.**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Sutton Co., Worcester, Mass.
Vitrid Wheel Co., Westfield, Mass.
- Groovers.**
Huth Bros. Saw Mfg. Co., Rochester, N. Y.
- Gunpowder.**
du Pont-de Nemours Powder Co., E. I., Wilmington, Del.
- Hammers. (Steam, Power, Pneumatic.)**
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Hand Elevators.**
McKenna Bros. Brass Co., Pittsburg, Pa.
Sidney Elevator Mfg. Co., Sidney, O.
- Handle Machinery. [See Woodworking Machy.]**
- Hangers. [See Pulleys, Shafting and Hangers.]**
- Hardwood Doors and Trim.**
Massee & Felton Lumber Co., Macon, Ga.
- Hauling Engines. (Steam Traction.)**
Case Threshing Mach. Co., J. I., Racine, Wis.
- Hay Tools.**
Myers & Bro., F. M., Ashland, O.
- Heater. (Portable, for Bituminous Pavements.)**
Ruggles-Coles Engineering Co., New York, N. Y.
- Heating Apparatus, Engineers and Contractors.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Monitor Steam Generator Mfg. Co., Balto., Md.
Peck-Hammond Co., The, Cincinnati, O.
Sturtevant Co., B. F., Hyde Park, Mass.
- Hoisting Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
Brown Hoisting Machy Co., Cleveland, O.
Byers Machine Co., John F., Ravenna, O.
Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.
Exeter Machine Works, Pittsburg, Pa.
Flory Mfg. Co., S. Bangor, Pa.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Males Co., Cincinnati, O.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Monaghan Machine Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Smith Co., T. L., Atlanta, Ga.
Stroudsburg Engine Works, Stroudsburg, Pa.
Williamson Bros. Co., Philadelphia, Pa.
- Holists.**
CHAIN.
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
Spindel, J. G., Reading, Pa.
- ELECTRIC.**
American Hoist & Derrick Co., St. Paul, Minn.
Lidgerwood Mfg. Co., New York, N. Y.
Monaghan Mch. Co., Chicago, Ill.
Northern Engineering Works, Detroit, Mich.
Patten Mfg. Co., Chattanooga, Tenn.
- PNEUMATIC MOTORS.**
Chicago Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Hoops, Bands, etc. (Galvanized.)**
J. C. H. Galvanizing Co., Philadelphia, Pa.
McCalla, Harold, Philadelphia, Pa.
- Hoops. (Barrel.)**
American Steel & Wire Co., Chicago, Ill.
Carnegie Steel Co., Pittsburg, Pa.
- Hose.**
Eureka Fire Hose Mfg. Co., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Hotels.**
Great Southern Hotel, Gulfport, Miss.
Hotel Essex, Boston, Mass.
- Hot Water Service Heaters.**
Alberger Pump Co., New York, N. Y.
- Hydrants.**
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Glimmerman Pipe & Foundry Co., Lynchburg, Va.
Goulds Mfg. Co., Seneca Falls, N. Y.
Myers & Bro., F. E., Ashland, O.
Wood & Co., R. D., Philadelphia, Pa.
- Hydraulic Pumps.**
American Spiral Pipe Works, Chicago, Ill.
- Hydraulic Rams.**
Goulds Mfg. Co., Seneca Falls, N. Y.
Rife Engine Co., New York, N. Y.
- Ice-making Machinery and Supplies.**
Columbus Iron Works Co., Columbus, Ga.
Creamery Package Mfg. Co., Chicago, Ill.
Frick Co., The, Waynesboro, Pa.
Hague, John, St. Louis, Mo.
Remington Machine Co., Wilmington, Del.
Falt-Nordmeyer Eng. Co., St. Louis, Mo.
Vilter Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.
- Incorporators. (Companies.)**
Delaware Trust Co., Wilmington, Del.
- Industrial, Agricultural and Commercial Opportunities.**
CITIES AND TOWNS.
Atlanta, Ga., Ga. Bureau of Indus'y & Immm'l.
Baltimore, Md., Gas & Electric Co.
Bedford City, Va., Board of Trade.
Cincinnati, O., U. S. Chamber of Commerce.
Newport News, Va., Old Dominion Land Co.
Texas City, Tex., Texas City Transportation Co.
Winchester, Va., Business Men's League.
- RAILROADS.**
Atlanta, Birmingham & Atlantic R. R., Atlanta, Ga.
Atlantic & West Point R. R. Co., Montgomery, Ala.
Baltimore & Ohio Railroad, Baltimore, Md.
Cincinnati, O., Cincinnati & Johnstown City, Tenn.
Central of Georgia Ry. Co., Savannah, Ga.
Florida East Coast Ry., St. Augustine, Fla.
Illinois Central Railroad Co., Chicago, Ill.
Norfolk & Western Railway, Roanoke, Va.
Richmond, Fredericksburg & Potomac Railroad, Ashland, Va.
Seaboard Air Line, Portsmouth, Va.
Southern Railway Co., Washington, D. C.
Tennessee Central Railroad Co., Cookeville, Tenn.
Virginia Railway & Power Co., Richmond, Va.
- Industrial Track Work. [See Railways, Ind.]**
- Injectors.**
Jenkins Bros., New York, N. Y.
Sellers & Co., Inc., Wm., Philadelphia, Pa.
- Insulating Materials.**
Johns-Manville Co., H. W., New York, N. Y.
- Insurance.**
Hartford Fire Insurance Co., Hartford, Conn.
Hartford Steam Boiler Inspection & Ins. Co., Hartford, Conn.
Maryland Casualty Co., Baltimore, Md.
- Interior Trim. (Metallic.)**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
U. S. Metal Products Co., New York, N. Y.
- Interstate Commerce Practice.**
Van Sant, Frank, Washington, D. C.
- Iron.**
Alabama Con. Coal & Iron Co., Birmingham, Ala.
American Rolling Mill Co., Middletown, O.
La Belle Iron Works, Steubenville, O.
Milton Mfg. Co., Milton, Pa.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Irrigation Machinery.**
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Journals. (Financial.)**
Financial Review, New York, N. Y.
- Kettles. (Steam Jacket.)**
Badger & Sons Co., E. B., Boston, Mass.
Petroleum Iron Works Co., Sharon, Pa.
- Key Seater. (Portable.)**
Burr & Son, John T., Brooklyn, N. Y.
- Knitting Machinery.**
Acme Knitting Machine & Needle Co., Franklin Falls, N. H.
- Lacquers. (All Purposes.)**
Durlacque Mfg. Co., St. Louis, Mo.
- Lamp Posts. (Electric, Gas.)**
Western Gas Construction Co., Ft. Wayne, Ind.
- Lamps. (Arc and Incandescent.)**
Boston Incandescent Lamp Co., Danvers, Mass.
Columbia Incandescent Lamp Co., St. Louis, Mo.
Foster's Incandescent Lamp Co., Fostoria, O.
General Electric Co., Schenectady, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Laws.**
Barr, J. H. C., Philadelphia, Pa.
Fendick & Co., Albert, Brunswick, Ga.
Kimbrough & Co., J. T., Atlanta, Ga.
Nusbaum & Co., S. L., Norfolk, Va.
Robertson, W. W., Norfolk, Va.
- Lathe. (Expanded Metal.)**
Carroll Portland Cement Co., Charleston, S. C.
Milwaukee Corrugating Co., Milwaukee, Wis.

- Lathes. (Engine.)**
Greaves, Klusman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Lawn Furniture.**
Bolles Iron & Wire Works, J. M., Detroit, Mich.
Dyer & Co., Baltimore, Md.
Dufur, Baggott & Co., Baltimore, Md.
- Leadite.**
Leadite Co., The, Philadelphia, Pa.
- Lighting Equipment.**
Holophane Co., Newark, Ohio.
- Lime.**
Carolina Portland Cement Co., Charleston, S. C.
Security Cement & Lime Co., Baltimore, Md.
Tidewater Portland Cement Co., Baltimore, Md.
- Lime. (Hydrated.)**
Security Cement & Lime Co., Baltimore, Md.
Tidewater Portland Cement Co., Baltimore, Md.
- Lime Kilns and Equipment.**
Improved Equipment Co., New York, N. Y.
- Limestone Products.**
Security Cement & Lime Co., Baltimore, Md.
- Liquor Filters.**
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**
Young & Seiden Co., Baltimore, Md.
- Loans.**
Assets Realization Co., Chicago, Ill.
- Lockers. (Metal.)**
Kelgley Metal Ceiling Mfg. Co., S., Pittsburg, Pa.
- Locomotives.**
INDUSTRIAL.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Byers Machine Co., John F., Ravenna, O.
Climax Mfg. Co., Corry, Pa.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive & Machine Co., Lima, O.
Males Co., Cincinnati, O.
Porter Co., H. K., Pittsburg, Pa.
Vulcan Iron Works, Wilkes-Barre, Pa.
- RAILWAY.**
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Lima Locomotive & Machine Co., Lima, O.
Males Co., Cincinnati, O.
Southern Supply Co., Norfolk, Va.
- Looms and Weaving Machinery.**
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
- Lubricants.**
Albany Lubricating Co., New York, N. Y.
- Lumber.**
Industrial Lumber Co., Elizabeth, La.
Masee & Felton Lumber Co., Macon, Ga.
- Lumber. (Heavy Construction, Pitch Pine, etc.)**
Masee & Felton Lumber Co., Macon, Ga.
National Lumber & Creosote Co., Texarkana, Ark.
Naylor & Co., S. E., Gulfport, Miss.
- Lumber. (Yellow Pine.)**
Industrial Lumber Co., Elizabeth, La.
- Lumber Buggies.**
Soule Steam Feed Works, Meridian, Miss.
- Lumber Stackers.**
Soule Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**
Bliss Co., E. W., Brooklyn, N. Y.
Eline, Lewis T., Alpena, Mich.
Lefter & Co., Charles, Brooklyn, N. Y.
Oil City Boiler Co., Oil City, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Rogersford Fdry. & Mach. Wks., Rogersford, Pa.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.
- Machinery and Supplies. (New and Second Hand Bargains.)**
Balto. Metal Mech. & Supply Co., Baltimore, Md.
Boston Iron & Metal Co., Baltimore, Md.
Brown, Jas. H., Brooklyn, N. Y.
Chicago House Wrecking Co., Chicago, Ill.
Cleveland Bldg. & Machinery Co., Cleveland, O.
Dorner Railway Equipment Co., Chicago, Ill.
Duzets & Son, New York, N. Y.
Hilner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. & Co., New York, N. Y.
Hilma Machinery Co., Chicago, Ill.
Kleinhaus, H., Pittsburgh, Pa.
Lehman, Charles T., Birmingham, Ala.
Levene & Co., E., Philadelphia, Pa.
Linton, W. J., New York, N. Y.
Lodge & Shipley Machine Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Matheson Iron & Metal Co., St. Louis, Mo.
Pannmuller Engineering Co., Chicago, Ill.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors' Supply Co., New York, N. Y.
Pittsburgh Mch. & Equip. Co., Pittsburgh, Pa.
Frontiers Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
Read Co., Howard W., Philadelphia, Pa.
Riker Machinery Co., New York, N. Y.
Samuel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
Southern Supply Co., Norfolk, Va.
Tampa Machinery Exchange, Tampa, Fla.
Texas Supply Co., Beaumont, Tex.
Toomey, Frank, Philadelphia, Pa.
Winterer Co., Herman L., Philadelphia, Pa.
Yeareley, Thomas, Philadelphia, Pa.
- Machine Tools.**
Greaves, Klusman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Machinists. (Engineers.)**
American Mch. & Mfg. Co., Charlotte, N. C.
Roanoke Iron Works, Inc., Roanoke, Va.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.
- Magnesia Materials.**
Johns-Manville Co., H. W., New York, N. Y.
- Magnesite. (Dead Burned.)**
Harbison-Walker Refractories Co., Pittsburg, Pa.
- Magnets. (Electric Lift.)**
Browning Engineering Co., Cleveland, O.
- Magnet Electro. (For Cottonseed, Linters and Hulls.)**
Dixie Electro Magnet Co., Memphis, Tenn.
- Magnetic Separators.**
Paxon Co., J. W., Philadelphia, Pa.
- Mail Chutes.**
Cutler Mail Chute Co., Rochester, N. Y.
- Mantels. (Wooden.)**
Northcross Mantel Co., W. J., Memphis, Tenn.
- Marble Work. (Interior.)**
Dagostin & Angelini Bros., Montgomery, Ala.
Southern Mosaic Tile Co., Birmingham, Ala.
- Masonry Dams.**
Multiple Arch Hydraulic Const. Co., Ltd., Spar-tanburg, S. C.
- Mechanical Draft.**
American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Metal Ceilings. [See Ceilings, Metal.]**
- Metaline.**
North Amer. Metaline Co., Long Island City, N. Y.
- Metal Culverts. [See Culverts.] (Corrugated Metal.)**
- Metal Polish.**
Hoffman, Geo. W., Indianapolis, Ind.
- Metal Shingles.**
Burris & Co., John T., Anderson, S. C.
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Manufacturing Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
- Metal Window Frames and Sashes.**
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Kelgley Metal Cell. & Mfg. Co., S., Pittsburg, Pa.
United States Metal Products Co., New York, N. Y.
Voigtmann & Co., Chicago, Ill.
- Metal Work. (Stamped and Embossed Hotel Checks, Key Tags, etc.)**
American Railway Supply Co., New York, N. Y.
- Metal-Working Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Gibbs Machinery Co., Columbia, S. C.
Lefter & Co., Charles, Brooklyn, N. Y.
Price Machinery Co., S. M., Norfolk, Va.
Rogersford Fdry. & Mach. Co., Rogersford, Pa.
- Micrometers, Calipers, Etc.**
Starrett Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**
Lockwood, Greene & Co., Boston, Mass.
Silline, J. E., Greenville, S. C.
- Mill Supplies.**
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Greenwald Co., I. & E., Cincinnati, O.
Lindsay, J. L., Inc., Richmond, Va.
Lombard Iron Works, Augusta, Ga.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Mecklenburg Iron Works, Charlotte, N. C.
Nordke & Marmon Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Smith-Courtney Co., Richmond, Va.
Starr Co., B. F., Baltimore, Md.
Stratton & Bragg Co., Petersburg, Va.
Ward-Becke Co., Washington, D. C.
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Mixer Machinery.**
Smith Co., T. L., Atlanta, Ga.
- Mixing Machinery.**
Dunning, W. D., Syracuse, N. Y.
Lynn-Superior Co., The, Cincinnati, O.
- Mortar Colors.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks.**
Schacht Motor Car Co., Cincinnati, Ohio.
- Mouldings, Casings, etc.**
Masee & Felton Lumber Co., Macon, Ga.
- Nails and Spikes.**
American Steel & Wire Co., Chicago, Ill.
Hoffman & Co., R. C., Baltimore, Md.
Republic Iron & Steel Co., Youngstown, O.
West Virginia Nail Co., The, Huntington, W. Va.
Youngstown Sheet & Tube Co., Youngstown, O.
- Nitre Pots, Eggs.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Nuts. [See Bolts, Nuts, Rivets, etc.]**
- Office Furniture.**
Ruse & Thompson, Baltimore, Md.
- Oils. (Lubricating, etc.)**
Albany Lubricating Co., New York, N. Y.
Borne-Scrymgeour Co., New York, N. Y.
Gallen Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburg, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
Texas Co., The, New York, N. Y.
- Oil-Burning Appliances.**
Petroleum Iron Works Co., Sharon, Pa.
- Oil Cans.**
Wall Mfg. Supply Co., P., Allegheny, Pa.
- Oil Engines. [See Engines (Oil).]**
- Oil Separators.**
Stewart Heater Co., Buffalo, N. Y.
- Oil Stones.**
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
- Oil-Well Machinery.**
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.
- Ore Briquetting Machinery.**
Devillers, Robert, Brooklyn, N. Y.
- Ornamental Iron Work.**
Belmont Iron Works, Inc., Philadelphia, Pa.
Bolles Iron & Wire Works, J. M., Detroit, Mich.
Chattanooga Iron & Wire Wks., Chat'n'ga, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Dow Wire Works Co., Louisville, Ky.
Ohio Elevator & Machine Co., The, Columbus, O.
Roanoke Iron Works, Inc., Roanoke, Va.
Schreiber & Sons Co., The, L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Southern Wire & Iron Mfg. Co., Dallas, Tex.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**
American Huhn Packing Co., New York, N. Y.
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Power Specialty Co., New York, N. Y.
- Paint. (Bridge.)**
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., East Wyalope, Mass.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
- Paints. (Cold Water.)**
Wilhelm Co., A., New York, N. Y.
- Paint. (Metal Preservative.)**
Detroit Graphite Co., Detroit, Mich.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
Wilhelm Co., A., New York, N. Y.
- Paint. (Roofing, Building, etc.)**
Armistage Mfg. Co., The, Richmond, Va.
Bird & Son, F. W., East Wyalope, Mass.
Cameron & Barkley Co., Charleston, S. C.
Carrolla Portland Cement Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., East Wyalope, Mass.
Gibbs Machinery Co., Columbia, S. C.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
Standard Paint Co., New York, N. Y.
Wilhelm Co., A., New York, N. Y.
- Painting. (Contractors for Bridges, Build-ings, etc.)**
Dinaco & Bro., A., Pittsburg, Pa.
- Paint-making Machinery.**
Campbell, P. F., Philadelphia, Pa.
Lynn Superior Co., The, Cincinnati, O.
- Paper. (Roofing, Building, Sheathing, etc.)**
Armistage Mfg. Co., Richmond, Va.
Bartlett Mfg. Co., Philadelphia, Pa.
Bird & Son, F. W., East Wyalope, Mass.
Cameron & Barkley Co., Charleston, S. C.
Southeastern Lime & Cement Co., Charleston, S. C.
Standard Roofing Co., Tulsa, Okla.
- Passenger Coach Steps. (Extension.)**
Blake Car Step Works, Charlotte, N. C.
- Patent Attorneys.**
Brown, Eugene G., Washington, D. C.
Chandler & Co., H. Ellis, Washington, D. C.
Chandee & Chandler, Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Owen, Richard B., Washington, D. C.
- Patterns.**
Roanoke Iron Works, Inc., Roanoke, Va.
- Pavement Filler.**
Barrett Mfg. Co., Philadelphia, Pa.
- Paving. (Contractors for Creosoted Wood Block.)**
Creosoted Wood Block Pav. Co., New Orleans, La.
- Paving Blocks. (Granite.)**
Harris Granite Quarries Co., Salisbury, N. C.
- Paving Blocks. (Wood Creosote-Resinate.)**
Gulfport Creosoting Co., Gulfport, Miss.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.
- Paving Brick.**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Brick Co., Birm'gh'm, Ala.
- Paving Machines. (Bituminous Materials.)**
Smith Co., T. L., Atlanta, Ga.
- Perforated Metal.**
Caldwell & Son, H. W., Chicago, Ill.
Ertle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., The, Carbondale, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
- Perspectives. (Water Color, for Architects.)**
Alger & Smith, Atlanta, Ga.
- Petroleum Refiners.**
Gulf Refining Co., Pittsburg, Pa.
Standard Oil Co., Cincinnati, O.
- Phosphate Machinery.**
Aising Engineering Co., J. B., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link-Belt Co., Nicetown (Philadelphia), Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Pratt Engineering & Mach. Co., Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Valk & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.
- Phosphor-Bronze. (Wire Rods, Sheets.)**
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
- Photo-Engravers.**
Baltimore Maryland Engr. Co., Baltimore, Md.
- Pig Iron.**
Alabama Cons. Coal & Iron Co., Birmingham, Ala.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Rogers, Brown & Co., Cincinnati, O.
Tennessee Coal, Iron & R. B. Co., B'm'gh'm, Ala.
- Pile Drivers.**
Browning Engineering Co., Cleveland, O.
Bucyrus Co., Milwaukee, Wis.
Vulcan Iron Works, Chicago, Ill.
- Piling. (Creosoted.)**
Gulfport Creosoting Co., Gulfport, Miss.
Intern'l Creosoting & Const. Co., Galveston, Tex.
Southern Creosoting Co., Ltd., Slidell, La.
- Pillow Blocks.**
Caldwell & Son, H. W., Louisville, Ky.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
- Pine Tar.**
Atlantic Turpentine & Refin'g Co., Savannah, Ga.
- Pipe. (Cast Iron.)**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
General Fire Extinguisher Co., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
- Pipe. (Coll.)**
Columbus Iron Works Co., Columbus, Ga.
Frick Co., The, Waynesboro, Pa.
National Pipe Bending Co., New Haven, Conn.
Whitlock Coll Pipe Co., Hartford, Conn.
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.)**
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buechel, Ky.
North Carolina Metal Culv. Co., Greensboro, N. C.
Virginia Metal Culvert Co., Roanoke, Va.
Virginia Railway Supply Co., Norfolk, Va.
- Pipe. (Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Keeler Co., E., Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Ruemmler-Dawley Mfg. Co., St. Louis, Mo.
- Pipe. (Spiral Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Wood.)**
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought.)**
General Fire Extinguisher Co., Providence, R. I.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburg, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**
Columbus Iron Works Co., Columbus, Ga.
Whitlock Coll Pipe Co., Hartford, Conn.
- Pipe Covering. (Steam.)**
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**
American Cast Iron Pipe Co., Birmingham, Ala.
Columbus Iron Works Co., Columbus, Ga.
General Fire Extinguisher Co., Providence, R. I.
York Mfg. Co., York, Pa.
- Pipe Jointing. (Gas and Water Main.)**
Leadite Co., The, Philadelphia, Pa.
- Pipe Locator.**
Modern Iron Works, Quincy, Ill.
- Pipe Unions and Joints.**
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburg, Pa.
Whitlock Coll Pipe Co., Hartford, Conn.
- Pipe Wrenches and Cutters.**
Saunders' Sons, D., Yonkers, N. Y.
- Pitch.**
Barrett Mfg. Co., Philadelphia, Pa.
- Planers. (Metal.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Planing Mill Work.**
Masee & Felton Lumber Co., Macon, Ga.
- Plaster of Paris.**
King & Co., J. B., New York, N. Y.
- Plaster.**
Security Cement & Lime Co., Baltimore, Md.
- Plaster. (Asbestos Cement, Plaster of Paris.)**
King & Co., J. B., New York, N. Y.
- Plaster Boards.**
King & Co., J. B., New York, N. Y.
Plaster Products Co., Hampton, Va.
- Plaster Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
- Plates.**
Cincinnati Iron & Steel Co., Cincinnati, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Pneumatic Tools. [See Tools—Pneumatic.]**
- Polishing Machinery. (Wheels and Blocks.)**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Power Transmission Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Brown Co., A. & F., New York, N. Y.
Caldwell & Son, Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dayton Globe Iron Works Co., Dayton, O.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Greenwald Co., I. & E., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Lane Mfg. Co., Montpelier, Vt.
Lindsay, J. L., Inc., Richmond, Va.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Morse Chain Co., Ithaca, N. Y.
Nordke & Marmon Co., Indianapolis, Ind.
Poole Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Price Machinery Co., S. M., Norfolk, Va.
Schodde's Sons Co., J. S., Macon, Ga.
Wolf Co., The, Chambersburg, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Presses. (Baling, Cottonseed Oil, etc., Hydraulic and Power.)**
Boomer & Boschert Press Co., Syracuse, N. Y.
Cardwell Machine Co., Richmond, Va.
Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Columbia, S. C.
- Presses. (Stamping.)**
Bliss Co., E. W., Brooklyn, N. Y.
Lefter & Co., Charles, Brooklyn, N. Y.
- Preventive for Sap Stain.**
Church & Dwight Co., New York, N. Y.
- Printers. (Book, Catalog, Job, etc.)**
Fleet-McGinley Co., Baltimore, Md.
Franklin Press Co., Petersburg, Va.

- Promoters.**
Assets Realization Co., Chicago, Ill.
Electric Bond & Share Co., New York.
- Protector Steel.** (Concrete Curb, Steps, etc.)
Steel Protected Concrete Co., Philadelphia, Pa.
- Pulleys.** (Friction Clutch.)
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Dodge Manufacturing & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Sinclear-Scott Co., Baltimore, Md.
Woods' Sons Co., T. B., Chambersburg, Pa.
- STEEL SPLIT.**
American Pulley Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
- WOOD SPLIT.**
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Mishawaka, Ind.
Lane Mfg. Co., Montpelier, Vt.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Bagshaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Works, Salem, Va.
- Pulleys, Shafting and Hangers.**
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Greenswald Co., L. & E., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Kordyke & Marston Co., Indianapolis, Ind.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Standard Roller Bearing Co., Philadelphia, Pa.
Woods' Sons Co., T. B., Chambersburg, Pa.
- Pumps.** (Centrifugal.)
Alberger Pump Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Haydon Pump Co., Quincy, Ill.
Morris Machine Works, Baldwinville, N. Y.
Wheeler Condenser & Eng. Co., New York, N. Y.
Wood & Co., H. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Pumps.** (Deep Well.)
McGowan Co., John H., Cincinnati, O.
- Pumps.** (Hydraulic.)
Buffalo Steam Pump Co., Buffalo, N. Y.
Cardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Emerson Steam Pump Co., Alexandria, Va.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Worthington, H. R., New York, N. Y.
- Pumps.** (Lift and Force.)
Goulds Mfg. Co., Seneca Falls, N. Y.
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Odorous and Excavating.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Pneumatic.)
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Roller Feed.)
Alberger Pump Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
McGowan Co., John H., Cincinnati, O.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.
Olson Steam Pump Co., Battle Creek, Mich.
Worthington, H. R., New York, N. Y.
- Pumps.** (Rotary.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Steam.)
Blakeslee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Gibbs Machinery Co., Columbus, S. C.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooven, Owen, Rentschler Co., Hamilton, O.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
McGowan Co., John H., Cincinnati, O.
Murray Iron Works Co., Burlington, Ia.
Price Machinery Co., S. M., Norfolk, Va.
Sydnor Pump & Well Co., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wheeler Condenser & Eng. Co., New York, N. Y.
Worthington, H. R., New York, N. Y.
- Pumps.** (Trench.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Vacuum.)
Alberger Pump Co., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Smith Co., T. L., Atlanta, Ga.
Union Steam Pump Co., Battle Creek, Mich.
Wheeler Condenser & Eng. Co., New York, N. Y.
- Pumps.** (Water-works.)
McGowan Co., John H., Cincinnati, O.
- Pumping Machinery.**
Allis-Chalmers Co., Milwaukee, Wis.
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Erie Pump and Engine Works, Erie, Pa.
Fairbanks, Morse & Co., Chicago, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooven, Owen, Rentschler Co., Hamilton, O.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
McGowan Co., John H., Cincinnati, O.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Sydnor Pump & Well Co., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., H. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Punching and Shearing Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Roversford Foundry & Mach. Co., Roversford, Pa.
- Pyrites Burners.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Quarrying and Stonecutting Machinery.**
Ingersoll-Rand Co., New York, N. Y.
- Railings, Grilles, etc. (Brass.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Railroads.** (Agricultural and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]
- Railroad Equipment and Supplies.** (New and Second-hand.)
American Frog & Switch Co., Hamilton, O.
American Locomotive Co., New York, N. Y.
American Valve & Meter Co., Cincinnati, O.
Bailey-Lebby Co., The, Charleston, S. C.
Baldwin Equipment & Supply Co., Chicago, Ill.
Benjamin Equip. Co., Harry, St. Louis, Mo.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Boston Iron & Metal Co., Baltimore, Md.
Cincinnati Frog & Switch Co., Cincinnati, O.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Indiana Steel & Iron Co., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
MacLeary, J. H., Suffolk, Va.
Males Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Maryland Equipment & Supply Co., Baltimore, Md.
Mathies Iron & Metal Co., G. St. Louis, Mo.
Mathies Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Q & C Co., New York, N. Y.
Head Co., Howard, Vt., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
Southern Iron & Equipment Co., Atlanta, Ga.
Southern Supply Co., Norfolk, Va.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Vulcan Iron Works, Wilkes-Barre, Pa.
Weir Frog Co., Cincinnati, O.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**
American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Kilby Frog & Switch Co., Birmingham, Ala.
Mathies Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)
Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)
Baldwin Equipment & Supply Co., Chicago, Ill.
Carnegie Steel Co., Pittsburgh, Pa.
Foster Co., L. B., Pittsburgh, Pa.
Franks, J. E., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Hyde Bros. & Co., Pittsburgh, Pa.
Indiana Steel & Iron Co., Pittsburgh, Pa.
Levis & Co., Henry, Philadelphia, Pa.
MacLeary, J. H., Suffolk, Va.
Mathies Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republie Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal Iron & R. R. Co., B'gh'm, Ala.
United States Rail Co., Cumberland, Md.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R. R. Frogs and Switches.]
- Rail Joints.**
Q & C Co., New York, N. Y.
- Railways.** (Industrial.)
Chase Fdry. & Mfg. Co., Columbus, O.
Hunt Co., C. W., West New Brighton, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Reflectors.**
Holophane Co., Newark, Ohio.
- Refrigerating Machinery and Supplies.**
American Hub Packing Co., New York, N. Y.
- Reinforcing Bars.**
Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)
Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**
Austin-Western Co., Ltd., The, Chicago, Ill.
Blount, C. F., Atlanta, Ga.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mach. Co., J. I., Racine, Wis.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Universal Road Mch. Co., Kingston, N. Y.
- Roadmaking Materials.**
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)
Austin-Western Co., Ltd., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mach. Co., J. I., Racine, Wis.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**
Gulf Refining Co., Pittsburgh, Pa.
Prime White Road Oil Co., Cincinnati, O.
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Road Plows.**
Case Threshing Mach. Co., J. I., Racine, Wis.
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservative.**
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)
Veatch & Co., L. R., Louisville, Ky.
- Rolled Metal Shapes.** (For Building Material Manufacturers.)
United States Metal Products Co., New York, N. Y.
- Rolls.** (Bending and Straightening.)
Bertsch & Co., Cambridge City, Ind.
- Roofers' and Tanners' Supplies.**
Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)
Dinisco & Bro., A., Pittsburgh, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)
Allen, Herbert F. L., Washington, D. C.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armistead Mfg. Co., Richmond, Va.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Bird & Son, F. W., East Walpole, Mass.
Cameron & Barkley Co., Charleston, S. C.
Carolina Portland Cement Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Johns-Manville Co., H. W., New York, N. Y.
National Roofing Co., Tonawanda, N. Y.
Standard Point Co., New York, N. Y.
Standard Roofing Co., Tulsa, Okla.
- Roofing.** (Cement.)
Carey Mfg. Co., Philippi, Cincinnati, O.
- Roofing.** (Metal Shingles.) [See Shingles, Metal.]
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing.** (Slate.)
East Bangor Consol. Slate Co., East Bangor, Pa.
Galt & Sons, John, New York, N. Y.
Genuine Bangor Slate Co., East Bangor, Pa.
Hawer, J. K., Slattington, Pa.
Johnson, E. J., New York, N. Y.
- Roofing Tile.**
National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Bird Band and Chipped Slate Surfaced.)
Bermingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Flexible Cement, Bar-lap Inserted.)
Bermingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Metal.)
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**
American Mfg. Co., New York, N. Y.
Broderick & Hanson Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Turner Co., J. Spencer, New York, N. Y.
Whitlock Cordage Co., New York, N. Y.
- Rope.** (Transmission and Hoisting.)
American Mfg. Co., New York, N. Y.
American Sheet & Wire Co., Chicago, Ill.
Broderick & Hanson Rope Co., St. Louis, Mo.
Caldwell Co., Inc., W. E., Louisville, Ky.
Columbian Rope Co., Auburn, N. Y.
Dodge Manufacturing Co., Mishawaka, Ind.
Hunt Co., C. W., West New Brighton, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Whitlock Cordage Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son, H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**
Eureka Fire Hose Mfg. Co., New York, N. Y.
New Jersey Car Spg' & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)
Lufkin Rule Co., The, Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.
- Safety Appliances.** (For Elevator.)
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**
Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Lathrop & Co., C. P., Richmond, Va.
- Sand Rammers.**
Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**
Church & Dwight Co., New York, N. Y.
- Sash Chain.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**
Gibbs Machinery Co., Columbus, S. C.
Huter Bros. Saw Mfg. Co., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sydnor Pump & Well Co., Richmond, Va.
- Saws.** (Band.)
Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Gainesville Iron Works, Gainesville, Ga.
- Sawmill Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Gibbs Machinery Co., Columbus, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Price Mch. Co., S. M., Norfolk, Va.
Schofield's Sons Co., J. S., Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Sydnor Pump & Well Co., Richmond, Va.
Union Iron Works Co., Selma, Ala.
- Saw Sharpeners.**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gls.)
Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**
Howe Scale Co., New York, N. Y.
Rome Scale & Mfg. Co., Rome, Ga.
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screening Apparatus.**
Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)
Cresson Co., Geo. V., Philadelphia, Pa.
Erdle Performing Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
Mundt & Sons, Charles, Jersey City, N. J.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
New Jersey Wire Cloth Co., Trenton, N. J.
Waterloo Cement Mchry. Co., Waterloo, Iowa.
- Sealer and Stamper.** (Envelope.)
Commercial Sales & Mfg. Co., Oberlin, O.
- Searchlights.**
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)
Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Savannah Blow Pipe Co., Savannah, Ga.
- Sewer Pipe Machinery.**
Taplin-Rice Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)
Bibb Sewer Pipe Co., Macon, Ga.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Carolina Portland Cement Co., Charleston, S. C.
Pittsburgh Buffalo Co., Pittsburgh, Pa.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens Sons Co., H., Macon, Ga.
- Shades.**
Holophane Co., Newark, Ohio.
- Shafting.** (Polished Steel.)
Field & Co., Inc., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Shafting Boxes.**
Hyatt Roller Bearing Co., Newark, N. J.
- Shafting.** (See Pulleys, Shafting and Hangers.)
- Shapes.** (Rolled Steel, Brass and Bronze.)
United States Metal Products Co., New York, N. Y.
- Sharpening Stones.**
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)
Roversford Fdry. & Mach. Co., Roversford, Pa.
- Sheet Brass and Copper.**
Hussey & Co., C. G., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**
Allegheny Steel Co., Pittsburgh, Pa.
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Metal.)
Burriss & Co., John T., Anderson, S. C.
Carolina Portland Cement Co., Charleston, S. C.
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Shipping Tags.**
Dennison Mfg. Co., Boston, Mass.
- Shredders.** (Bark, Chip, etc.)
Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)
Kinner Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)
Victor Mfg. Co., Newburyport, Mass.
- Siding and Roofing.** (Bird Band and Chipped Slate Surfaced.)
Bermingham & Seaman Co., Chicago, Ill.
- Signs.** (Metal Lithographed.)
Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Advt.)
Indestructible Sign Co., Blahopville, S. O.
- Skylights and Cornices.**
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)
Carolina Portland Cement Co., Charleston, S. C.
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., East Bangor, Pa.
Hawer, J. K., Slattington, Pa.
- Slaters' Tools.**
Galt & Sons, John, New York, N. Y.
- Sluice Gates and Appliances.**
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)
Chattanooga Boiler & Tank Co., Chat'n's, Tenn.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Petroleum Iron Works Co., Sharon, Pa.
Rummond-Dawley Mfg. Co., St. Louis, Mo.
Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)
Weber Chimney Co., Chicago, Ill.
- Speedometers.**
Electric Speedometer Co., Washington, D. C.
- Spikes.** [See Nails and Spikes.]
- Spring.** (Machinery, Railway, Spiral.)
American Steel & Wire Co., Chicago, Ill.
Gary Spring Works, New York, N. Y.
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinklers.** (Automatic.)
General Fire Extinguisher Co., Providence, R. I.

- gamp Mills.**
Meckenburg Iron Works, Charlotte, N. C.
- gamps. (Brass, Rubber.)**
Benett Rubber Stamp & Seal Co., Atlanta, Ga.
Dixie Seal & Stamp Co., Atlanta, Ga.
- Standpipes.**
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Chicago Bridge & Iron Wks., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Kewler Co., E. Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Rumrill-Dawley Mfg. Co., St. Louis, Mo.
- Stapling Machinery. (Fruit Package Basket, etc.)**
Maranac Machine Co., St. Joseph, Mich.
- Stationers. (Envelopes, Letter and Bill Heads, etc.)**
Franklin Press Co., Petersburg, Va.
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**
Boule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**
General Fire Extinguisher Co., Providence, R. I.
Saunders' Sons, D., Yonkers, N. Y.
- Steam Heating.**
General Fire Extinguisher Co., Providence, R. I.
Kewler Co., E. Williamsport, Pa.
Peck-Hammond Co., The, Cincinnati, O.
- Steamship Lines.**
Baltimore Steam Packet Co., Baltimore, Md.
Chesapeake Steamship Co., Baltimore, Md.
Merchant & Miners' Trans. Co., Baltimore, Md.
- Steam Separators.**
Hoppe Mfg. Co., Springfield, O.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
- Steam Shovel Chains.**
Welmer Chain & Iron Co., Lebanon, Pa.
- Steam Shovels. [See Excavating Machinery.]**
- Steam Shovels. (Revolving.)**
Browning Engineering Co., Cleveland, O.
- Steam Specialties.**
Fowell Co., Wm., Cincinnati, O.
- Steam Traps.**
American Blower Co., Detroit, Mich.
Jenkins Bros., New York, N. Y.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
- Steel.**
American Rolling Mill Co., Middletown, O.
Dietrich Bros., Baltimore, Md.
Field & Co., Inc., Philadelphia, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Steel. (Open Hearth.)**
Erie Forge Co., Erie, Pa.
- Steels. (Tool.)**
Field & Co., Inc., Philadelphia, Pa.
Jessops Sons Steel Sales Co., Wm., St. Louis, Mo.
- Steel. (Vanadium.)**
Carnegie Steel Co., Pittsburgh, Pa.
- Steel Buildings. (Designers, Builders.)**
American Bridge Co. of New York, New York, N. Y.
Baltimore Bridge Co., Baltimore, Md.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Wks., Chicago, Ill.
Farria Bridge & Iron Co., Pittsburgh, Pa.
Missouri Valley Bridge & Iron Co., Leavenworth, Kans.
Phoenix Iron Co., Philadelphia, Pa.
Roanoke Bridge Co., Roanoke, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Virginia Bridge & Iron Co., Roanoke, Va.
- Steel Casting.**
Crawble Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Reliance Steel Casting Co., Pittsburgh, Pa.
- Steel Forms. (For Concrete Construction.)**
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
- Steel Plate Work.**
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Chicago Bridge & Iron Wks., Chicago, Ill.
Hoffman & Co., R. C., Baltimore, Md.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Rumrill-Dawley Mfg. Co., St. Louis, Mo.
- Steel Protector. (Concrete Curb Steps, etc.)**
[See Protector Steel.]
- Steel Sheet Piling.**
Jones & Laughlin Steel Co., Pittsburgh, Pa.
- Stencils.**
Baltimore Office Supply Co., Baltimore, Md.
Dixie Seal & Stamp Co., Atlanta, Ga.
- Steps. (Extension, for Railroad Coaches.)**
Blake Car Step Works, Charlotte, N. C.
- Stirrups. (Building.)**
Chesapeake Iron Works, Baltimore, Md.
- Stock Certificates, Bonds and Seals.**
Baltimore Office Supply Co., Baltimore, Md.
Dixie Seal & Stamp Co., Atlanta, Ga.
- Stokers. (Mechanical.)**
Babcock & Wilcox Co., New York, N. Y.
Harrisburg Fdry. & Mach. Works, Harrisburg, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.
- Storage Batteries.**
Elec. Storage Battery Co., The, Philadelphia, Pa.
Lee Electric Co., Baltimore, Md.
Westinghouse Machine Co., Pittsburgh, Pa.
- Strainers.**
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Structural Steel and Iron.**
American Bridge Co. of New York, New York, N. Y.
Baltimore Bridge Co., Baltimore, Md.
Belmont Iron Works, Inc., Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Wks., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
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Jones & Laughlin Steel Co., Pittsburgh, Pa.
Missouri Valley Bridge & Iron Co., Leavenworth, Kans.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Roanoke Bridge Co., Roanoke, Va.
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Schreiber & Sons Co., The L., Cincinnati, O.
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Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.
- Stamp Pullers.**
Zimmerman Steel Co., M. B., Lone Tree, Mo.
- Sugar-Mill Machinery.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Sulphur.**
Union Sulphur Co., New York, N. Y.
- Super-Heaters. (Steam.)**
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.
- Surveying Instruments.**
Keuffel & Esser, Hoboken, N. J.
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- Switchboards. Switches, etc.**
Engberg's Elec. & Mech. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
- Switches. [See Railroad Frogs and Switches.]**
- Switchstands.**
American Valve & Meter Co., Cincinnati, O.
Weir Frog Co., Cincinnati, O.
- Tachometers. (Electric.)**
Electric Speedometer Co., Washington, D. C.
- Tackle Blocks. (For Wire or Manila Rope.)**
Patterson Co., W. W., Pittsburgh, Pa.
- Tags.**
Dennison Mfg. Co., Boston, Mass.
- Tanks. (Iron and Steel.)**
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
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Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Chicago Bridge & Iron Wks., Chicago, Ill.
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Des Moines Bridge & Iron Co., Des Moines, Ia.
Gem City Boiler Co., Dayton, O.
Harry Bros. Co., Dallas, Tex.
Hartley Boiler Works, Montgomery, Ala.
Kewler Co., E., Williamsport, Pa.
Kennett Co., Chicago Heights, Ill.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
New Orleans Bldg. & Metal Wks., New Orleans, La.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Rumrill-Dawley Mfg. Co., St. Louis, Mo.
Seafie & Sons Co., Wm. B., Macon, Ga.
Schiffeld's Sons Co., J. S., Macon, Ga.
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Tennessee Metal Culvert Co., Nashville, Tenn.
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Walsh & Weldner Boiler Co., Chattanooga, Tenn.
- Tanks. (Wood.)**
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. A., Richmond, Va.
Sydnor Pump & Well Co., Richmond, Va.
- Tapes. (Measuring.)**
Keuffel & Esser, Hoboken, N. J.
Lufkin Rule Co., Saginaw, Mich.
Starratt Co., L. S., Athol, Mass.
- Telephones. (Supplies, Equipment.)**
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.
- Telephone Cable.**
Western Electric Co., New York, N. Y.
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Intern'l Cero. & Constr. Co., Galveston, Tex.
Western Electric Co., New York, N. Y.
- Terra-cotta.**
Atlanta Terra-Cotta Co., East Point, Ga.
Bibb Sewer Pipe Co., Macon, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.
- Threshers.**
Cardwell Machine Co., Richmond, Va.
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- Tie Plates. (Railways.)**
Virginia Railway Supply Co., Norfolk, Va.
- Tile. (Drain, Floor, etc.)**
Amer. Enam. Brick & Tile Co., New York, N. Y.
Bibb Sewer Pipe Co., Macon, Ga.
Oceoce Brick & Tile Co., Milledgeville, Ga.
- Tile. (Monale.)**
Dagostin & Angelini Bros., Montgomery, Ala.
Southern Mosaic Tile Co., Birmingham, Ala.
- Tile. (Roofing.)**
National Roofing Tile Co., Lima, O.
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American Sheet & Tin Plate Co., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.
- Tobacco Machinery.**
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.
- Tool Steels.**
Jessop's Sons Steel Sales Co., Wm., St. Louis, Mo.
- Tools. (Machinists.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morse Twist Drill & Mach. Co., New Bedford, Mass.
- Tools. (Mechanical.)**
Starratt Co., L. S., Athol, Mass.
- Tools. (Pneumatic.)**
American Compressor & Pump Co., Baltimore, Md.
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Torches.**
Wall Mfg. Supply Co., P., Allegheny, Pa.
- Towers. (Steel and Wood.)**
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Chicago Bridge & Iron Wks., Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
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Case Threshing Mach. Co., J. I., Racine, Wis.
- Tramway. (Overhead.)**
Northern Engineering Works, Detroit, Mich.
Speldel, J. G., Reading, Pa.
- Tramway. (Wire Rope.)**
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Caldwell & Sons Co., H. W., Chicago, Ill.
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- Transformers.**
Crockor-Wheeler Co., Ampere, N. J.
Moloney Electric Co., St. Louis, Mo.
Triumph Electric Co., Cincinnati, O.
- Transmission Line Supplies. (Electric.)**
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- Trench Excavator.**
American Steel Dredge Co., Ft. Wayne, Ind.
Fairbanks Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
- Trucks. (Motor.)**
Schacht Motor Car Co., Cincinnati, Ohio.
- Trucks. (Platform, Freight, Mill, Factory, etc.)**
Chase Fdry. & Mfg. Co., Columbus, O.
Clark Co., Geo. F., Windsor Locks, Conn.
Howe Scale Co., New York, N. Y.
Rome Scale & Mfg. Co., Rome, Ga.
- Trucks. (Storage Battery Auto.)**
Westinghouse Machine Co., Pittsburgh, Pa.
- Trucks. (Wood and Steel for Portable Machinery.)**
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- Trust Companies. [See Bankers and Brokers.]**
- Tube Well Strainers.**
Cook Well Co., St. Louis, Mo.
- Tubes. (Boiler.)**
Allegheny Steel Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.
- Tubing.**
Field & Co., Inc., Philadelphia, Pa.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Turbines. (Hydraulic.)**
Allis-Chalmers Co., Milwaukee, Wis.
Davis Foundry & Machine Works, Rome, Ga.
Dayton Globe Iron Works Co., Dayton, O.
Leffel & Co., James, Springfield, O.
Poele Engineering & Mach. Co., Baltimore, Md.
Smith Co., S. Morgan, York, Pa.
Trump Mfg. Co., Springfield, O.
- Turbines. (Steam.)**
Allis-Chalmers Co., Milwaukee, Wis.
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
Ft. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Southwick Fdry. & Mach. Co., Philadelphia, Pa.
Terry Steam Turbine Co., New York, N. Y.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.
- Turbine Condensers.**
Wheeler Condenser & Eng. Co., New York, N. Y.
- Turntables.**
Baltimore Bridge Co., Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.
- Turpentine.**
Atlantic Turpentine & Refin'g Co., Savannah, Ga.
- Tuyeres. (Copper and Bronze.)**
Keystone Bronze Co., Pittsburgh, Pa.
- Twine.**
American Manufacturing Co., New York, N. Y.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Turner Co., J. Spencer, New York, N. Y.
Whitlock Cordage Co., New York, N. Y.
- Twine Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
- Twisting Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
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Dart Manufacturing Co., E. M., Providence, R. I.
- Vacuum Cleaning Apparatus.**
Blaisdell Machinery Co., Bradford, Pa.
- Valves.**
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Frick Co., The, Waynesboro, Pa.
General Fire Extinguisher Co., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
National Tube Co., Pittsburgh, Pa.
Powell Co., Wm., Cincinnati, O.
York Mfg. Co., York, Pa.
- Varnish.**
Berry Bros., Ltd., Detroit, Mich.
Glidden Varnish Co., Cleveland, O.
- Vencer Machines.**
Titus, E. E., Petersburg, Va.
- Ventilating Apparatus. (Engineers' and Contractors.)**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Peck-Hammond Co., Cincinnati, O.
Sturtevant Co., B. F., Hyde Park, Mass.
- Ventilators.**
Merchant & Evans Co., Philadelphia, Pa.
- Wagons. (Dump.)**
Eagle Wagon Works, Auburn, N. Y.
Troy Wagon Works Co., Troy, O.
- Wall Plaster.**
King & Co., J. B., New York, N. Y.
- Wall Plugs. (Galvanized.)**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Wall Tiles.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Page Woven Wire Fence Co., Adraln, Mich.**
- Washers. (Ore and Phosphate.)**
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg.
- Washers and Rivets. [See Bolts, Nuts, B. Studs and Washers.]**
- Water Filters. [See Filters, Water, for D tic and Industrial Purposes.]**
- Water Meters.**
American Valve & Meter Co., Cincinnati, O.
- Waterproofing. (For Brick Work.)**
Barrett Mfg. Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
National Roofing Co., Tonawanda, N. Y.
- Waterproofing. (For Concrete.)**
Barrett Mfg. Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
- Waterproof Compound. (Liquid.)**
Carolina Portland Cement Co., Charleston, S. C.
National Roofing Co., Tonawanda, N. Y.
- Water-Softening Apparatus. (Purifying.)**
American Water Softener Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mahawaka, Ind.
Gem City Boiler Co., Dayton, O.
Kennett Co., Chicago Heights, Ill.
N. Y. Cont. Jewell Filtration Co., New York, N. Y.
Roberts Filter Mfg. Co., Philadelphia, Pa.
Seafie & Sons Co., Wm. B., Pittsburgh, Pa.
Tucker & Laxton, Charlotte, N. C.
- Water Supply Systems. (Town, Home, Railroad, etc.)**
Rife Engine Co., New York, N. Y.
- Water-Wheels. [See Turbines. (Hydraulic).]**
- Water-Works Supplies and Appliances.**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Constr. Co., Philadelphia, Pa.
Bibb Sewer Pipe Co., Macon, Ga.
Blount C. F., Atlanta, Ga.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Caldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
Leadbite Co., The, Philadelphia, Pa.
McWane Pipe Works, Lynchburg, Va.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens' Sons Co., H., Macon, Ga.
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.
- Weigher. (Recording Liquid.)**
Worthington, Henry R., New York, N. Y.
- Well Contractors. (Oil, Artesian, etc.)**
Cook Well Co., The, St. Louis, Mo.
Hutches Specialty Well Drill Co., Charleston, S. C.
Stothoff Bros., Flemington, N. J.
Sydnor Pump & Well Co., Richmond, Va.
- Well Tools and Supplies.**
Cook Well Co., The, St. Louis, Mo.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.
- Wheels and Axles.**
Empire Manufacturing Co., Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.
- Wheelbarrows and Trucks.**
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Wheels. (Steel and Steel Tired.)**
Carnegie Steel Co., Pittsburgh, Pa.
Empire Manufacturing Co., Quincy, Ill.
- Window Frames and Sashes. (Fireproof.)**
Detroit Steel Products Co., Detroit, Mich.
United States Metal Products Co., New York, N. Y.
Voigtmann & Co., Chicago, Ill.
- Window Guards. (Wire.) [See Wire Goods.]**
- Windmills.**
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. E., Louisville, Ky.
- Wire Insulating.**
General Electric Co., Schenectady, N. Y.
- Wire. (Barbed Wire, etc.)**
American Steel & Wire Co., Chicago, Ill.
Roebling's Sons Co., J. A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.
- Wire Cloth. (Iron, Steel, Brass, etc.)**
American Steel & Wire Co., Chicago, Ill.
Caldwell & Sons Co., The H. W., Chicago, Ill.
Diamond Wire Products Co., Columbus, O.
Meyers Mfg. Co., Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.
Wright & Co., W. N., New York, N. Y.
- Wire Goods.**
Bollen Iron & Wire Works, J. E., Detroit, Mich.
Buckeye Wire & Iron Works Co., Columbus, O.
Cincinnati Mfg. Co., Cincinnati, O.
Diamond Wire Products Co., Columbus, O.
Dow Wire Works Co., Louisville, Ky.
Dufur, Baggett & Co., Baltimore, Md.
Jones & Co., L. E., Baltimore, Md.
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New Jersey Wire Cloth Co., Trenton, N. J.
- Wire Netting.**
American Steel & Wire Co., Chicago, Ill.
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- Wire Rope.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Contractors' Plant Mfg. Co., Inc., Buffalo, N. Y.
Roebling's Sons Co., J. A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
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- Wood Blocks. (For Paving and Factory Floors.)**
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- Woodworking Machines.**
Chicago Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Wood-Fiber Plaster.**
King & Co., J. B., New York, N. Y.
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Anderson, Cain & Shepherd. 32	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tappin Rice-Clark Co., The. 12
Angle, Geo. W. 32	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Taylor Sons Co., Chas. 12
Appomattox Iron Works & Supply Co. 116	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tenn. Cent. R. R. Co. 12
Armstrong Mfg. Co. 50	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tenn. Coal, Iron & R. R. Co. 12
Arnold Co., The. 50	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tenn. Metal Culvert Co., The. 12
Arnold Sand & Gravel Co. 37	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Terry Steam Turbine Co., The. 12
Asphalt Ready Roofing Co. 48	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Texas City Transportation Co. 12
Assets Realization Co. 100	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Texas Co. 12
Atlantic, Birmingham & Atlantic Railway. 107	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Texas Supply Co. 12
Atlanta Terra Cotta Co. 124	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Thomas Grate Bar Co. 12
Atlanta & West Point R. R. Co. 127	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tidewater Portland Cement Co. 12
Atlantic Turpentine & Refining Co. 45	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Titus, E. E. 12
Atlantic Engine Works. 45	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Toomey, Inc., Frank. 12
Austin Mfg. Co. 58	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Treasury Dept. 12
Austin-Western Co. Ltd., The. 58	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Trampe, Chas. F. 12
Badcock & Wilcox Co. 12	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Triumph Electric Co. 12
Badger & Sons Co., E. B. 15	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Troy Wagon Works Co., The. 12
Bailey-Libby Co. 17	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Trump Co., The. 12
Baker, J. R. 106	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Tucker & Laxton. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Turner Co., J. Spencer. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Underground Const. Co., The. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Union Iron Works Co., The. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Union Mining Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Union Steam Pump Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Union Sulphur Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	United States Cast Iron Pipe & Foundry Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	United States Rail Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	U. S. Wood Preserving Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Universal Concrete Tile Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Universal Road Machinery Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Universal Telegraph Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Valk & Murdoch Iron Works. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Van Sant, Frank. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Van Winkle Gin & Mch. Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Vestch & Co., L. R. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Victor Mfg. Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Vitor Mfg. Co. 12
Baldwin Locomotive Works. 109	Carroll, George & Ohio Railway Co. 141	Fort Wayne Electric Works. 106	Lea, Henry I. 32	Pettit & Cave. 32	Vitrol Mfg. Co. 12
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